

# MILITARY REVIEW

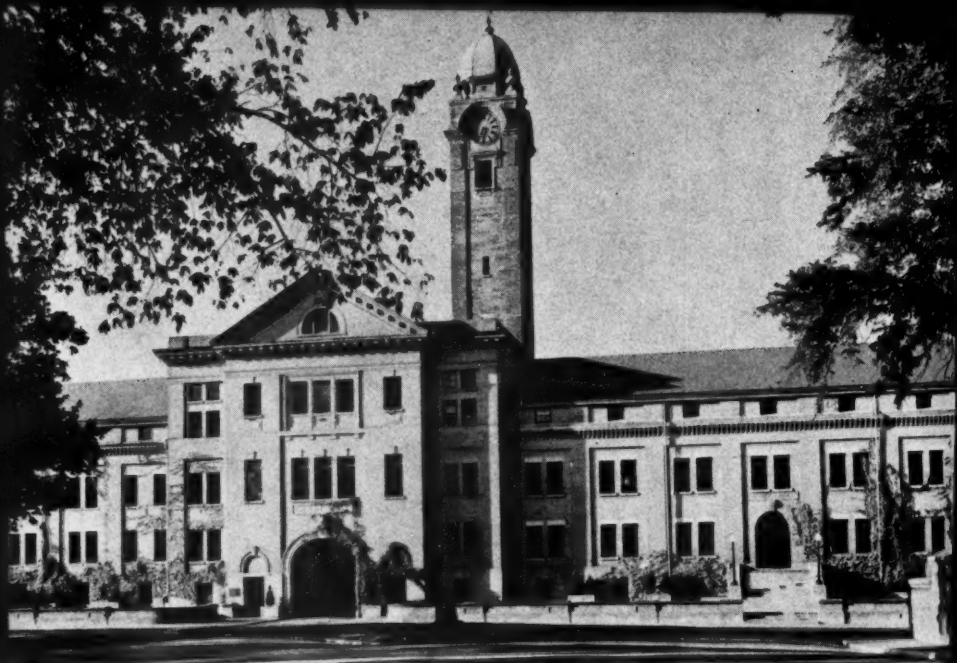


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# COMMAND AND GENERAL STAFF COLLEGE

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# IN DEFENSE OF THE ARMY

Lieutenant Colonel Wallace C. Magathan, Jr., *Artillery*  
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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**W**RITING in the August issue of *Army Combat Forces Journal*, Major Forward had this to say:

*It has become clear that the Army is now an auxiliary service. . . . Of course everyone admits that ground forces are still needed. . . . [but] Why not make the Army a branch of the Air Force? . . . it is hoped that many officers will begin to be attracted by the . . . honor that the Nation will accord us for closing up an unmodern and expensive service.*

The irony of this passage is hardly subtle, although the very fact it was put to paper is indicative of uneasiness in the Army officer corps on the true role of the Army in the *thermonuclear missile* era. That acceptance of this role had been a matter of agonizing concern to former Army Chief of Staff, General Ridgway, was evidenced in his masterful testament, his letter of 27 June 1955, to Secretary Wilson in which he tersely expounded his views. Further the public statements of the present Chief of Staff, General Maxwell D. Taylor, appear consistent with General Ridgway's appraisal. Thus while

the Army's top leadership has been emphatic and declarative, more of the why is needed at the "Indian" level.

The Army conference held at Fort Benning in October 1955 is a first-class step toward the Army's gaining the initiative and stimulating the officer corps—giving the Army a "voice." Skepticism has come about through the gradual erosion of innate convictions by volatile, sloganistic journalism nourished by the messianic appeal of the "ultimate weapon." Unfortunately the case for the Army lacks the simple analogy and forcefulness of the impact of Operation *Crossroads*' films, a transcontinental speed record, the *Nautilus* sliding down the ways, or the vision of the intercontinental missile. The crux of the problem is that supporting arms or services have a head start when it comes to simplicity. The reason is that supporting elements contribute a fraction to the over-all result; it is so much easier to comprehend the part rather than the whole. We must, therefore, clearly and incontrovertibly formulate this "whole."

## "Time of Troubles"

Our "time of troubles" really commences with the statement by Secretary Dulles in New York City before the Council of Foreign Relations on 12 January 1954: "The basic decision was to depend primarily upon a great capacity to retaliate,

*A strong, motivated, modern army, the sole instrument of policy capable of protecting and taking the ground men live on, is the answer to the Soviet air-atomic threat—bulwarked by requisite sea and air forces*

instantly, by means and at places of our own choosing." This formally launched the concept of "massive retaliation." This speech was hailed in Air Force circles as giving primacy to its role. According to Brigadier General Dale O. Smith in *US Military Doctrine*:<sup>1</sup>

*Massive instant retaliation, then, becomes a strategy of air celerity . . . no instant retaliation of course is possible through our movement of massed surface forces to stem the flow of an aggressive horde overrunning a free country. Instant retaliation must come through the speed possible by air and naval action.*

There you have it in one, neat, terse passage—the new look. Walter Lippman commented:

*The cardinal policy of the new policy is to get away from being pinned down, rigidly committed, and, therefore, without power to maneuver and with little freedom of decision.<sup>2</sup>*

When John Q. Citizen poses the problem to the Army officer it has simply boiled down to this: By the time the thermonuclear clouds lift, Aggressor will be impotent. Just what is there left for the Army to do besides pick up the pieces? In other words this school of thought has as-

signed to the hydrogen bomb—and the delivery service—the tasks enunciated by Clausewitz, "the destruction of the enemy's military forces and of his will to fight."

The Army on the other hand maintains its classic position: General Ridgway in a statement written for the *Army, Navy, Air Force Journal* of 11 June 1955 said: "The most significant responsibility of the Army is to be ready to conduct and win sustained combat on land." He then paraphrased Clausewitz as follows: "Only when enemy ground forces have been defeated and domination has been achieved over enemy territory and the people inhabiting it has victory been won." Shortly thereafter, General Taylor expanded on this view at the Quantico Conference in July 1955 when he said:

*This capability [the Army's] must include: . . . properly proportioned forces to deter general war, and to defeat the enemy if the deterrent fails. . . . In the event of war the Army is a decisive instrument in the attainment of a victory compatible with postwar national objectives.*

*Officers' Call Number 3, 1954, titled "Role of the Army" set forth the relationship of this role to that of the other services:*

*The battles between air and air, air and sea, and sea and sea elements are often critical, and sometimes are decisive within the framework of the battle itself; they are not decisive in the broader sense of being the war-winning campaigns.*

To sum up, the foregoing statements then establish the Army's visualization of the basic matrix for United States strategy and the fundamental *raison d'être* of the Army itself. The alternative strategy is suggested by John Q. Citizen's hypothetical statement above and is voiced by General Smith in his book. Without belittling the role of the Army in either

<sup>1</sup> *US Military Doctrine*, Brig Gen D. O. Smith, Duell, Sloan & Pearce, New York, 1955, pp 60 & 781  
<sup>2</sup> Smith, *op cit*, p 44

Lieutenant Colonel Wallace C. Magathan, Jr., graduated from the United States Military Academy in 1943. He was assigned as an instructor at the Academy from 1944 to 1946. His service also includes duty with the Intelligence Division, Headquarters, EUCOM; the 10th Field Artillery Battalion, 3d Infantry Division in Korea; and as commanding officer, 553d Field Artillery Battalion, and executive officer, 77th Field Artillery Group, Fort Sill, Oklahoma. He attended the 1949-50 Advanced Course of The Artillery School at Fort Sill. Following his graduation from the Regular Course of the Command and General Staff College in 1954 he was assigned to the faculty of the College.

World War II or Korea, General Smith argues that results indicate that either of those conflicts could have been won with a reliance on a strategic air strategy of destruction, utilizing conventional bombs!<sup>3</sup> Thus the "lists" are clearly drawn: Ground decisiveness versus "air celerity."

### Examine the Concepts

In order to understand the Army's position it is essential to examine certain concepts. The first of these is the fundamental objective of the United States: the maintenance of her sovereignty and security. This is an external as opposed to an internal problem and involves the interplay of sovereign, independent states. Within this international framework there exists at any given time a certain distribution of power and "every accession of power redresses the balance in somebody's favor or to somebody's loss."<sup>4</sup> Our objective requires us to maintain a balance of power that is advantageous; or, to put it in the context of current affairs, to limit the power of the Soviet Union. If our security—and that of a like-minded free world—is to be maintained by a proper balance of power, that balance must be in favor of the free world.

This factor, of course, lies at the root of our system of alliances and commitments which circle the globe. We cannot afford to permit the Soviet to chip away at the periphery without presenting us a clear-cut challenge, for at some indefinable point the power balance will reverse, and we will be confronted with two equally impalatable alternatives: alter the balance by a resort to force or accept Soviet terms. There is no escaping the fact that the course of international politics is determined by the shifts in the total power equation—for politics is power in action. Its ultimate application is war and that

is merely another way of stating the famous dictum of Clausewitz: "War is nothing more than a continuation of political intercourse with interposition of other means."<sup>5</sup>

The second basic point is that:

*... power ... is the ability to realize its will, to get what it wants by whatever means, by annoying others, by making them uneasy, by eloquence, by arousing pity, by threats, by bluff, by trades, by the application of force, or by any other methods that will work. ... One way or another all sources of power in human society manifest themselves, certainly, in the compliance of man."*

In the final analysis this "compliance" or "consent" is a product of power in action. In its broadest sense it constitutes the normal verdict of the collectivity of mankind—the force which we seek actively to muster in the forum of the United Nations, the verdict of world opinion. In a narrower sense it represents acquiescence of citizens to their government, voluntary in the case of a democracy, forced in the case of a dictatorship.

### Consent

Consent has the property of reinforcing the physical power of the side in whose favor it is exercised, and vice versa. The situation in North Africa is a good illustration of this fact. Developments there have forced a redeployment of French troops with a NATO commitment, thus weakening that structure. At the same time the position of the vital United States airbases in Morocco are placed in jeopardy. Lack of consent forced Great Britain out of Egypt and paved the way for current Communist penetration there. The situation in turn is aggravated by the general lack of consent on the part of

<sup>3</sup> Smith, *op cit*, pp 148 & 184

<sup>4</sup> Prof Carl R. Becker, *How New Will the Better World Be?*, p 4, Alfred A. Knopf, New York, 1944

<sup>5</sup> "Der Krieg ist nichts als eine Fortsetzung des politischen Verkehrs mit Einmischung anderer Mittel." *Vom Kriege*. VIII, 6b

<sup>6</sup> *Civilization and Foreign Policy*, Louis J. Halle, Harper & Bros, New York, 1955, pp 53, 54, 55

the Arab states to the existence of the state of Israel. Lack of consent on the part of the Cypriotes to British control endangers British control of the eastern end of the Mediterranean which in turn has exacerbated traditional hatreds between the Greeks and the Turks, threatening the northern flank of this vital area. Six battalions of British troops are tied up in Kenya and the equivalent of two divisions in Malaya. The situation in Indochina has yet to run its course. Although far from complete, this recital is sufficient to demonstrate the point.

In the North African situation we also see clearly a concerted effort to move the dispute to the world stage, to the United Nations. This move is a direct attempt to overturn the "legitimacy" of France's position in Algeria, the inhabitants of which are citizens of France and who have representation in the French National Assembly in Paris. Successful harnessing of world opinion would feed back to reinforce the lack of consent there. Just consider the security problems of the United States, should the peoples of Puerto Rico, Alaska, or Hawaii—who are citizens of the United States—take a similar tack. Or on a broader scale imagine the security problems incident to a withdrawal of consent on the part of the Japanese or Germans to the presence of our forces on their territory.

Thus we see that military power or force is only one element of the total power equation and that in the final analysis power rests on the compliance of the people who make up the military forces on the one hand and the compliance of the peoples under the aegis of that military force. Actually compliance is the battlefield of that incredible misnomer, the "cold war." Victories on this battlefield are just as important as those on any conventional battlefield and represent equally as positive accretions to the side in whose favor that battle goes.

Unquestionably, however, the final answer lies with military force.

*The policy of maintaining the security and sovereignty of the United States, for example, would be no more than an idle wish if we had no military forces. The same is true of our broad policy for promoting peace [e.g., maintenance of the status quo] throughout the world; no amount of talking about that national purpose would be effective if we did not stand ready and able to back the words with appropriate action, including military action when our Government so directs.<sup>7</sup>*

To put it another way:

*The particular kind of power that enters into the relationship of states in a balance of power system is predominantly the function of force. In the crudest terms it is essentially reducible to a balance of physical strength within a community of rival states. In this international context willing consent . . . is secondary.<sup>8</sup>*

Failure of the average citizen to recognize this elementary fact brought about the downfall of the League of Nations. On the other hand the general approval of the non-Communist world of United Nations intervention in Korea was tangible evidence of world awakening to the fact that violence is restrained by force, not reason.

We have now reached the point in our analysis where we should take stock of how the Soviets view the problem. I think we can unequivocally say that their objective is not merely the reverse of ours, to limit the power of the free world, but, to advance, to alter the balance of power in their favor. This is no idle speculation. It is the product of a rational analysis of forces and drives which have been at work in the USSR long enough to aver that they are just as definitive, and hard to reverse, as the basic philosophy of the United

<sup>7</sup> *Officers' Call*, op cit, p 3

<sup>8</sup> Halle, op cit, p 58

States. Khrushchev was only recently reported as arguing that, "As for communism, he said when he spoke of that way of life winning throughout the world, he was not advocating revolution but discussing a natural development."<sup>9</sup> It is on this basis that President Eisenhower opts for "deeds, not words," in other words some tangible evidence of other than a transitory, "tactical" reversal of form. In short:

*Soviet policy presumes permanent conflict (although not necessarily armed), even in peace. Thus the Soviet military authority, Shaposhnikov, declared: 'If war is a continuation of politics, only by other means, so also peace is a continuation of struggle only by other means.' In this sense, and this is basic to Soviet doctrine and strategy, the distinction between peace and war is obliterated, except for the difference in the degree of armed force used in the perpetual conflict.*<sup>10</sup>

In conceiving this program of struggle, of advancement, no means is left out of the equation and the direction of Soviet policy is based upon a careful estimate, all factors making up the total relative power picture.

### Soviet Challenge

The Soviet challenge is infinitely varied, direct and indirect. It involves a ceaseless effort to increase Soviet power through offensives along the two broad avenues, military force and consent. The objectives selected are equally as varied and in consonance with the means assigned to the task. The compatibility with Clausewitzian precepts of Soviet military-political doctrine which guides this program is indisputable. However, current interpretations have not taken cognizance of the fact that while Clausewitz advanced the idea of "absolute war" he also recognized that wars could be fought for limited objectives; or,

put another way, "that the extent of power exerted will be governed by the political aims of the opponents."<sup>11</sup> Unfortunately Clausewitz died before his major work *On War* was finished and we must rely upon an interpretation of his earlier writings to complete his thought. Writing on the subject of "Strategy" in 1804, he stated his view as follows:

*The political purpose of war can be of a double nature: either entirely to destroy the opponent, to break up the entire existence of the state, or to prescribe the conditions of peace. . . . In both cases the objective must be to so cripple the enemy's forces that he either cannot prosecute the war at all, or, without endangering his entire existence.*<sup>12</sup>

The record amply bears out the fact that the Soviets have adopted this aspect of Clausewitzian theory as well. The roll call of Soviet advances since World War II is all too fresh in our minds, and the Soviets have freely "interposed other means" to accomplish their objectives. "Other means" have included subversion, sabotage, colonial uprising, and open satellite aggression. What one may forget, however, is the demonstrated readiness of the USSR to employ her armed forces directly where calculation of the risk has indicated a potential for advance without the danger of *general war*.

Thus with the decline of German power following World War I, the youthful Soviet state endeavored to recover czarist-held lands in eastern Poland in 1920. It was not until 19 years later that this endeavor was to succeed when Soviet troops by previous arrangement occupied eastern Poland up to the Curzon Line under the cloak of German attack in western Poland. This move was fraught with little danger since Great Britain and France were pre-

<sup>11</sup> Clausewitz, Jomini and Schieffelin, USMA Dept of Military Art and Engineering, 1943, p. 36

<sup>12</sup> Quoted by Eberhard Kessel in "Zur Genesis der Modernen Kriegslern," *Wehrwissenschaftliche Rundschau*, Sep 1953, p. 51

<sup>9</sup> KC Star, "Red Jet Boast," 12 Nov 55, p. 1

<sup>10</sup> Raymond Garthoff, *Soviet Military Doctrine*, The Free Press, Glencoe, Ill., 1953, p. 11



occupied with the threat to the balance of power posed by further German aggression.

Direct Soviet attack on Finland in 1940 is another case in point. The miscarriage of this opportunistic venture was not due to Soviet miscalculation of the attitude of the great powers thereto, but rather to the inefficiency of the Soviet Army and the internal situation in Finland. Other evidence of the lack of Soviet scruple against employment of arms appeared in the little advertised Russo-Japanese border clashes in the Soviet Far East in the thirties—hardly calculated to tilt the balance of power.

Finally, one should remember that the Soviet post-World War II offensive has been carried out *notwithstanding a monopoly of atomic power by the United States*. Moreover, although no such policy was formally promulgated, the capacity of the United States to "massively retaliate" was implicit in the very nature of things. How else could one explain Churchill's often quoted remark to the effect that United States atomic superiority was the principal factor which held the Soviets in check in western Europe following western demobilization.<sup>13</sup> Admittedly it is strongly argued that the elemental failure was to specify a line which "thou shalt not cross." The most glibly cited example of violation of this guide is Korea. Proponents of this position point out that Secretary Acheson for all practical purposes publicly "wrote Korea off." One seldom hears, however, of the positive affirmation of this policy in the withdrawal of the United States 7th Infantry Division. The Soviet simply interpreted this withdrawal as lack of serious intent. For, in the final analysis, willingness to commit ground forces is the acid test of such intent.

In western Europe the presence of United States (and allied) troops, how-

ever weak, constituted a clear declaration of "Don't Tread on Me!" Our very weakness there nonetheless was sufficient invitation to the Communists to swallow up Czechoslovakia. Can anyone doubt the fate of West Berlin, airlift or no, minus the presence of those few battalions of troops in the city? Obviously an attack upon United States troops constitutes a direct challenge to the United States—a clear *casus belli* by any standards. Also quite obvious is the fact that such a challenge would inevitably have unleashed atomic retribution, a state of affairs unpleasant to contemplate under any circumstances, much less when the aggressor is unable to reply in kind.

Nonetheless the Communists continued to chip away—in areas where a potential for advance existed but we were uncommitted. Dien Bien Phu occurred well after formal promulgation of the policy of "massive retaliation." There our commitment was limited to material and funds; we knew it, the Communists knew it. On the other hand the Communists were unable to secure Taiwan, a loudly proclaimed objective, simply because the United States Seventh Fleet was master of the avenue of approach. General Ridgway provides the moral:

*If military power is to support diplomacy effectively, it must be real and apparent to all concerned, and it must be capable of being applied promptly, selectively, and with the degree of violence to the occasion.<sup>14</sup>*

#### Death Knell of Great Deterrent

There can be no question of the efficacy of America's monopoly of atomic power in preventing *general war* during the past decade. But what of the future? Joseph H. Spiegelman writing in "The Shift to Initiative" in Harper's, September 1955, states it quite succinctly:

*When Russia has enough nuclear bombs,*

<sup>13</sup> Note: Gen Smith also makes this point in *op cit*, p 46

<sup>14</sup> Letter to Secretary Wilson

and enough aircraft and guided missiles to 'saturate' this country—and that point is fast approaching if not already here—the American margin of superiority, however great, will be meaningless. As Russia approaches what Thomas K. Finletter calls 'absolute atomic-airpower,' our initiation of armed hostilities becomes unthinkable. We know it, our allies know it, Russia knows it.

This is a harsh and foreboding statement. Its implication is clear: The policy of "massive retaliation" is obsolescent if not already obsolete. This is not to say that maintenance of absolute "air-atomic superiority" is no longer a prime objective. Certainly parity, in both these areas, defensively as well as offensively is the minimum that we can tolerate. The trouble is that in dealing with weapons on the order of magnitude of hydrogen bombs there is no margin for error. Even General Smith admits that no air defense is perfect.<sup>15</sup> These two factors combine to sound the death knell of the decade of the great deterrent.

Although we cannot rule out the possibility of Soviet leaders' willingness to risk national suicide—after all Hitler did his utmost to that end—it hardly seems rational to include it in a list of alternatives. History has shown us that the Soviet leadership is not adventuristic. All policy is dictated by the necessity to preserve Russia as the base of advance. Where is the rationale in presupposing a predilection for a policy that carries the likelihood of Armageddon—of destruction of the object sought as well as the seeker? Again Clausewitz provides us with an assist: "War is rational, he argued, only insofar as it safeguards or carries forward the political interests of the state."<sup>16</sup>

One may question, as well, whether the leaders of democratic governments could

unleash their air-atomic power to punish an act of aggression knowing full well that no defense is perfect. "After you, Alphonse!" Happily (?) history is not without a parallel. How otherwise would one explain mutual abstention from using gas in World War II? The Geneva Convention was not the inhibiting factor. It was simply a rejection of a policy of self-immolation. Even the suicidal maniac Hitler peered into this abyss and drew back from it. The odd fact is that we shall soon be hoist on our own petard. For while the Soviet Union presently argues the case for the outlawry of atomic weapons (to liberate her army), she stands to capitalize on the moral suasion of world opinion when such outlawry exists *de facto*. In fact the closer she comes to parity the more value will she realize from such advocacy. This major tenet of Soviet diplomacy gradually becomes unassailable.

More importantly, however, our air-atomic power will no longer provide us with pluses in the power balance and a condition of equilibrium will obtain. Consequently, statesmen will once again be compelled to strike the balance in "conventional" terms with all that it implies. Our allies and the uncommitted nations must surely question our adherence to a policy which pledges American cities as guaranty of their security. They must total Communist pressures against local resources. Deficits must be made up from external sources with specific, operable measures appropriate to the threat. In the case of countries to which we are linked by treaty it is our obligation to cash the "notes" presented for payment.

Take the case of a small independent entrepreneur whose existence is threatened by Firm "B's" machinations. He might hesitate to accept an ostensibly favorable deal with Firm "A" if he were to suspect that "A" might be able to pay with only unredeemable paper, thereby forcing him to the wall. Under such circumstances he

<sup>15</sup> Smith, *op cit*, p 159

<sup>16</sup> Bernard Brodie in "How War Became Absurd," Harper's, Oct 1955, p 37



might well succumb to the blandishments and pressures being exerted by "B" for a merger in anticipation of securing better terms now. "A's" assurance of eventual succor would mean little to the entrepreneur who meanwhile had to go through bankruptcy. Thus through "A's" inability to furnish acceptable payment, the potential compliance of the entrepreneur, who is naturally predisposed to maintain his independence, is alienated, and he consents to "B's" terms in hope of avoiding total disaster. Translate this analogy into terms of international relations and the parallel is valid. Professor Henry A. Kissinger of Harvard University put it this way:

*Few political leaders will run the risk of foreign occupation even though liberation is to follow eventually. The promise of victory in a general war will mean little to the leader of a threatened country which is meanwhile to be Sovietized.<sup>17</sup>*

We may rest assured that the Soviet Union will not hesitate to exploit her ensuing "conventional"—and "unconventional"—advantage by a strategy of creating situations where her superiority will extend her area of dominance with minimum risk of a general conflagration.

To sum up the foregoing, it is plain that the United States is confronted with the task of maintaining a superior power position vis-à-vis a dynamic, Hydra-headed Soviet expansionism in an era of nullification of our air-atomic technological superiority. Furthermore we have seen that while power is composed of two elements, force and consent, that military force is the "arbiter."

What then must be the main lines of our strategy to accomplish this task? The basic equation which we must satisfy is that of the balance of power. No matter how unpalatable the phrase may be to

many, history shows us that the only alternatives are tyranny or chaos.<sup>18</sup> Moreover, the solution to this equation must turn up a clear advantage for our side. For again history demonstrates that general war has occurred at precisely that point where one side felt obliged to resort to force to prevent an unalterable shift of power to the other side.

### Main Lines of Strategy

The first requisite is the protection of our homeland.

The second requisite is the protection of vital areas of the free world.

From these relatively uncontroversial precepts, the following general tasks may be derived:

As a minimum, maintenance of parity with the Soviet bloc in the air-atomic technological sphere.

Nurturing of ties with our allies and the rallying of uncommitted nations to our side.

Physical protection of vital areas or development of appropriate local military strength sufficiently to gain time for the implementation of prearranged, viable, mutual commitments based on realistic capabilities.

Protection of air and sea communications to our allies and other critical areas.

A fundamental requisite for this strategy is that the means supporting it are *adequate* for its ends. Anything less amounts to bluff, and there is nothing so psychologically depressing as a bluff which has been called. Every commitment amounts to a sight draft which is liable to be presented for payment at any time, and reserves must be sufficient to cover the liabilities outstanding. It is mandatory that our capability *in being* be sufficient to obviate any miscalculation by the Soviets as to our determination to intervene, else we only invite the very conflict we seek to avoid, or accept forced appeasement. It is

<sup>17</sup> Henry A. Kissinger, "Military Policy and Defense of the 'Grey Areas,'" *Foreign Affairs*, Apr 1955, p 420

<sup>18</sup> Halle, *op cit*, p 49

essential that this strategy be conducted dynamically. We must recognize that the *status quo* is a will-o'-the-wisp and positive steps must be taken to exploit potential initiative in areas where we have a clear margin of superiority, and to wrest the initiative in the uncommitted areas.

Mere defense is negative and unfruitful. If we assume the defensive, it must be as a part of a "deliberate plan to win the battle by counteroffensive action, or to economize forces in one area in order to concentrate superior forces for decisive offensive action elsewhere. Only offensive action achieves decisive results."<sup>19</sup>

Soviet offensive combinations must be anticipated and frustrated before they are consummated. Of course from a military viewpoint this is a strategy of the defensive-offensive. Our projection of strength abroad secures bridgeheads and supplies the depth consistent with this concept. It is necessary that this strategy be flexible—that the means be *appropriate* to the ends. This is what General Taylor means when he speaks of the Army's power ranging from the "kiloton blast to the MP's truncheon." "Massive retaliation" on the other hand does not provide this flexibility; it presents no choice of broad alternatives; it constitutes a single course of action; it is too positive. Again Clausewitz furnishes a terse reminder: "Positive theory is impossible. That is, it is impossible to lay down a set system which in itself will ensure success."<sup>20</sup>

### Moral Basis of Strategy

What of the moral basis of our strategy? Fundamentally our Nation is founded upon the precepts of the dignity of man and of the right to individual freedom under law. Our strategy must, therefore, not be antithetical to such goals. We must demonstrate a capacity for moderation, an avoidance of stark alternatives which

threaten total submission or total involvement. As pointed out previously, willy-nilly, we are already on the defensive in this regard. We occupy this uncomfortable position precisely because of the West's relative weakness in ground strength.

*To retain the full support of our allies, the United States must continue to offer reasonable hope that civilization will survive; that hope is best promoted by policies which demonstrate that in any future war there will be a maximum effort to achieve a controlled application of atomic destructive power.<sup>21</sup>*

The basic concept underlying the implementation of this strategy is not unlike that which Great Britain pursued in the century and a half prior to 1914.

*Her influence in the military realm came from her ability (based on her island safety) to deploy her limited ground forces where their location was more important than their size, knowing that they could be extricated by the Royal Navy in case of misfortune.<sup>22</sup>*

To this concept I would now add the further flexibility and *alacrity* provided by modern global air transport.

### Sole Instrument of Policy

Only a strong, highly efficient, progressive, motivated, modern army, the *sole* instrument of policy capable of protecting and taking the ground men live on, is compatible with this strategic outline—bulwarked to be sure by requisite sea and air forces.

Where do we stand now? Basically, the present military program of the free world, from all appearances, is not markedly inconsistent with the foregoing strategic outline. General Ridgway does make an important exception, however:

*The present United States preoccupa-*

<sup>19</sup> FM 100-5, Note "forces" in this context is meant in its broadest sense, not merely military power

<sup>20</sup> Dept of M A & E, USMA, *op cit*, p 37

<sup>21</sup> *Officers' Call*, *op cit*, p 11

<sup>22</sup> Professor H. A. de Weerd (RAND), "Britain's Military Policy," *Foreign Affairs*, Oct 55, p 109

*tion with preparations for general war has limited the military means available for cold war to those which are essentially byproducts or leftovers from the means available for general war.*<sup>23</sup>

Secretary Dulles in his speech before the Council of Foreign Relations, while rejecting a policy of embroilment with overwhelming Soviet bloc manpower around the globe, nonetheless presented the necessity for local defense and enunciated the doctrine of the "long haul." Nations were to proceed with the development of a suitable military posture at a speed consistent with the capacity of their economies to support it without ruinous effects. At the November 1955 meeting of the Big Four Foreign Ministers at Geneva he remarked that "we have learned the hard way that one-sided weakness does not promote peace." It must be recognized, however, that the doctrine of "massive retaliation" is predicated upon United States air-atomic superiority.

Thus the "long haul" concept does not stretch vaguely off into the future, but is geared to the speed of Soviet thermonuclear developments. Any other view amounts to self-delusion. The Soviets are certainly well aware of this factor, otherwise why the frenzied outcries and maneuverings to prevent the creation of a West German *Army*? Arguments that she is

rather more concerned over the vitiation of her long-range policy of keeping West Germany weak relative to an *already* re-armed East Germany, similar to the condition which existed in Korea in 1950, appear to be secondary. Certainly there is no debating the fact that the creation of a West German Army is a vital plank in our foreign affairs platform. This fact alone should illuminate the importance of the United States Army in the general scheme of things. One cannot very well have it both ways! Of course, our Government knows this very well, as the continued appropriations for the Army indicate. To argue that the role of ground forces has diminished while we energetically pursue a farflung program to build up such forces is completely contradictory.

The salient fact is that the sands of time are running out in the face of a growing Soviet air-atomic threat and the time is not long hence. While we must not blind ourselves to Soviet improvement in military art, we must not become hypnotized by a superfluity of manpower. Mastery of the art and efficiency of forces have time and again won out over mere numbers. This is the particular genius and advantage of the West. It constitutes a winning combination. Finally, when it comes right down to it, we must not hesitate to tighten our belts. As Oliver Wendell Holmes said: "Freedom is worth more to society than it costs."

<sup>23</sup> Letter to Secretary Wilson

As in the past, the United States Army will bear the brunt of any future conflict in which the Nation engages. The Army will be a dominant force in the struggle and the Army will provide the ultimate force by which victory is achieved.

There is also a myth that national security can be obtained solely through productive capacity and matériel. This, too, can be dangerous. We would not for a moment lessen the great credit due those in production, but industrialists would be the first to agree that the production of weapons is just a preparatory step toward placing them in the hands of men who will use them to secure victory. It is man that is paramount, not his machines, tools, or weapons.

*Secretary of the Army Wilber M. Brucker*

# HARVARD'S CIVILIAN WAR COLLEGE

Colonel T. N. Dupuy, *Artillery*, and Captain Gayle Simkins, Jr., *Artillery*

*The views expressed in this article are the authors' and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**H**ARVARD University has just started the second year of a unique experiment, one of importance to military men as well as educators. In the dry wording of the catalogue of the Littauer Graduate School of Public Administration, the experiment is called "A Seminar in Defense Policy and Administration in the United States." The proceedings of the past year have established it as the first civilian "war college" in the country.

The man responsible for the experiment, Professor W. Barton Leach of the Harvard Law School, does not like to have his course compared with the several war colleges. In the first place, he points out, his is merely one of many graduate seminars offered at Harvard University; comparison with the highest military institutions of learning seems to impute to his course a special status and scope to which it does not pretend. In the second place, says Leach, a brigadier general in the Air Force Reserve and a consultant to the Air Force, the objectives of his seminar are quite different than those of the military war colleges.

Nonetheless, the comparison is apt, and it is safe to predict that it will be in-

creasingly applied by those who follow its future development. Although Professor Leach is correct in his insistence that the seminar is not and never will be a competitor of the war colleges, it obviously complements their activities in its objectives, its scope, and its participants.

Few need to be reminded that the defense problems of this Nation have become increasingly complex during the last quarter century. Maintenance of a strong, sound Defense Establishment is essential to national survival. It has become evident to most citizens that our military strength is a major factor in assuring the effectiveness of our foreign policy. American military commitments around the globe appear to have become almost indefinite. And all this at a time when scientific and technological developments are creating a revolution in military weapons and doctrine.

The accepted principal of civilian control or civilian leadership of the Armed Forces emphasizes the need for civilian leaders with training or knowledge which will enable them to cope promptly and effectively with the complexity of our national security problems. The National Security Act of 1947, with its various amendments, provides for some 31 civilian secretaries, under secretaries, and assistant secretaries in policy-making roles in the Defense Establishment. These civilian officials today are constantly required to take action on vital defense matters. The National Security Council and members

*The extent of the impact of Harvard's War College on universities and on the Defense Establishment in the near and long-term future undoubtedly will be of great significance to education and national security*

of various congressional committees must consider security affairs affecting not only the services, but every citizen, and the very existence of the Nation. Their decisions, or recommendations to the President and Congress, require, among other things, understanding of current military problems, the general nature of recent technological developments, the lessons of history, and the impact of major defense legislation upon the national economy.

Ultimate civilian leadership, of course, is exercised by the citizens of the United States, and expressed, sometimes distordedly, in what is known as public opinion. Appointed and elected officials of the Government are most responsive and sensitive to this public opinion which is shaped, guided, and reflected in the press. The newspaperman, or radio commentator, therefore, plays an important role in civilian leadership as exercised in the United States.

The principal objective of the new Har-

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*Captain Gayle Simkins, Jr., graduated from the United States Military Academy in 1946. He went to Korea in September 1950 and served with the 187th Airborne Regimental Combat Team. After attending the 1951-52 Advanced Course at The Artillery School, Fort Sill, Oklahoma, he became Assistant Professor of Military Science and Tactics at Harvard University. During his last year of duty at Harvard he participated as a student in the Defense Policy Seminar. He is currently a battery commander, 67th Armored Field Artillery Battalion, 3d Armored Division, Fort Knox, Kentucky.*

vard Defense Policy Seminar is to prepare promising young civilians for possible future leadership in national defense matters, either in the executive or legislative branches of the Government, or in the formation of public opinion. The course is devoted to giving these prospective leaders an opportunity to gain a clear understanding of the nature of the problems involved in defense policy matters.

A second objective is to fill a void which has existed in the fields of study and research to be found in American universities. Harvard believes that:

*With regard to any major aspect of national life it is the function of the universities to provide (a) information and analysis, to the end that university graduates can become a nucleus of informed public opinion, (b) intensified and specialized study for those who may be training for leadership in this area, (c) inquiry, research, and fruitful controversy, to the end that through critical examination policies and procedures may be improved.*

As Professor Leach has pointed out to the responsible deans at Harvard, "The universities are performing these functions with regard to every aspect of Government—except defense." Yet this is the field of national policy which has greatest impact, direct and indirect, on all citizens, not excluding the products of our great universities.

A third, and incidental, objective of the seminar is to provide an integrational course for officers of the Armed Forces who are engaged in graduate studies at Harvard. The seminar assists these officers in relating their other graduate courses to their military specialties, and teaches them a great deal about the operation of the civilian side of the Defense Establishment. In turn, these professionals provide invaluable, varied experience in seminar discussions and activities.



The Defense Policy Seminar is offered jointly by the Law School, School of Business Administration, and the Graduate School of Public Administration. Associated with Professor Leach in the presentation of the seminar are Professor Arthur Smithies, Chairman of the Economics Department at Harvard, who had served as an economic advisor to the Bureau of the Budget; Professor Arthur E. Sutherland of the Law and Public Administration Schools, World War II fighter pilot who has served as a postwar consultant to the Air Force on procurement and legislative matters. Other prominent faculty members attend the weekly 2-hour sessions. The Professors of Military Science and Tactics, Naval Science, and Air Science also serve as faculty advisors.

The first seminar class was comprised of about 30 graduate students enrolled in the Law, Business, or Public Administration Schools. Among these were several Army and Air Force officers assigned to one of these schools for 1 or 2 years as student officers. Some of the civilian students had had military experience. Additional students, civilian and military, as well as officers assigned to Reserve Officers' Training Corps duty, also attended sessions whenever possible, with the approval of Professor Leach. The interest of seminar participants was so high last year that Leach received complaints from other professors that students were neglecting their other courses in favor of Defense Seminar assignments.

The range of subjects discussed at the various sessions was wide indeed. In broadest terms, the course was a study of the problems which face civilians involved

either in administration or legislation affecting a military or defense enterprise. Past and current national security problems were scrutinized for the purpose of recognizing sound principles of defense policy and, if possible, of developing recommended solutions in some specific instances. It should be emphasized that approach and viewpoints were those of civilian policy makers or members of congressional committees. Strictly military problems were discussed only for the purpose of providing essential background information which should be available to responsible civilian policy makers or legislators.

The course, then, was essentially a major research project in various aspects of defense matters. Neither Professor Leach nor his associates pretended that they knew the answers to our national security problems, although none of these eminent scholars hesitated to offer their personal opinion whenever this seemed appropriate.

### Major Project

Since last year's course was the first of its nature, a major procedural difficulty was to obtain suitable reference or study material. Many sources were investigated and utilized to meet the deficiency. Students were organized into small committees which gathered reference material from newspapers, magazines, personal libraries, reports of congressional hearings, and the like. The selected material was then catalogued, indexed, and filed. This research, incidentally, helped to make members of the several committees experts in such fields as the military budget, air defense, or tactical air support for ground forces, to name only a few categories. Future seminar groups will benefit from the efforts of the first seminar because about 1,500 pages of pertinent information—catalogued, classified, and evaluated—will be available to them for study.

Another major project was the reading,

summarizing, and evaluation of a number of selected books on defense and related matters. Each member of the seminar could not be expected to read all of them. Instead, each student chose one important book from the list, then read it, studied it, and submitted a complete written report, including background information about the author, and a summary and evaluation of the subject matter and of the important defense policy issues discussed in the book. These reports were all reproduced and distributed to each student. By thus pooling the talents of individuals, an immense amount of defense information was evaluated and disseminated, as well as incorporated in the files, while each student received enough information to guide him in the selection of further reading on defense problems in which he was particularly interested.

#### Outstanding Features

The outstanding feature of the seminar was the appearance of guest lecturers, distinguished authors, military men, public officials, scientists, and educators who could speak with authority and from personal experience on various aspects of defense problems. An indication of the variety and wealth of experience thus tapped in some 25-guest lecture sessions can be readily perceived by a partial list: Mr. Robert Amory, Deputy Director of the Central Intelligence Agency; Mr. Thomas Finletter, former Secretary of the Air Force, and author of *Power and Policy*; Vice Admiral M. B. Gardner, Deputy Chief of Naval Operations (Plans and Policy); Mr. Frank H. Higgins, Assistant Secretary of the Army for Logistics; Colonel George A. Lincoln, Professor of Social Sciences at West Point, and Chief of the War Department's Strategy and Policy Group in World War II; Marshal of the Royal Air Force Sir John Slessor, author of *Strategy for the West*; General A. C. Wedemeyer, Retired, Commander in Chief

of the China theater during World War II; and Mr. Joseph Welch, Counsel for the Department of the Army at the Army-McCarthy hearings.

To obtain maximum benefit from the visits of these distinguished guests, student panels were assigned to prepare background information which could be circulated beforehand to all members of the seminar. In addition, these panels drew up lists of questions which were sent to the lecturers. Sometimes there was an opportunity for the panels to meet the guest informally before the scheduled session. As a result of these preparations, students and lecturers were able to make the most of the 2-hour seminar periods which usually lasted considerably longer and often were continued informally over drinks and a dinner table.

The lively give-and-take of the seminar discussions was in no way hindered by the diversity of background and experience of the student participants, ranging from the extremes of officers with 20 years' service, to graduate students only 2 or 3 years out of college. On the contrary, with students so carefully selected, and possessing such interest in the various subjects discussed, all were able to make valuable contributions in exchanges of views that were always stimulating and absorbing.

The military participants found that they gained as much from the seminar as they contributed. They benefited from discussions even in matters with which they were most familiar because they had an opportunity to learn new and civilian viewpoints with a consequent broadening of their own perspectives. In particular they learned a great deal about the other services and their problems, and about matters of civilian-military policy making and relationships with which some had never come in contact, and which others had seen from only one point of view. To these officers, at least, the course ac-



tually did resemble some aspects of war college studies.

As might be expected in discussions dealing with so many different aspects of national security affairs, sometimes the discussion touched upon classified matters. Realizing that this might occur the principle was established that discussions would be limited to matters which could be discussed in open congressional hearings or in official nonclassified publications. The objectives of the seminar were such that there was no need to go into matters of a military technical nature. On the few occasions when the trend of the discussion approached classified subjects, Professor Leach or one of his advisors would tactfully, or abruptly, change the subject. When an expert, student, faculty member, or guest lecturer was asked a question that should not be answered, he simply said so.

It was found necessary, however, to establish a local classification called "academic top secret." This protected lecturers, faculty, and students, enabling them to participate freely in the lively, argumentative, and often controversial discussions. "Academic top secret" does not limit anyone from speaking his mind; it merely means that no statement made in the seminar will be publicly attributed to any individual or published in the written records of the seminar without his express permission.

#### Impact of Course

The impact of the course upon the civilian students was such that several are investigating the possibilities of careers in the Defense Establishment. Some of the men who received graduate degrees last June have already been employed in the

Pentagon. Thus it is likely that the course will make an immediate and direct contribution to national security affairs by attracting high-caliber young men to some of the many important civilian career possibilities in the Defense Department or in one of the three service departments.

The great interest which the Defense Policy Seminar has aroused at Harvard is demonstrated by the large enrollment for the 1955-56 academic year. To handle this larger group of about 75 men, committees of about 10 students each are organized and in the committee meetings the benefits derived from the informal give-and-take of a small group are retained. Harvard has received a substantial grant from the Ford Foundation to enable Professor Leach to continue with his experiment, which he ran on a financial shoestring last year. He has assembled a small staff to assist him in administering and guiding the course this year and among these are three of last year's students.

#### Conclusion

It is obvious, therefore, that both Harvard and the Ford Foundation consider that the defense seminar experiment last year was a success. There is also evidence that the Defense Department and the services are also intensely interested in the seminar and in its products. There is no question that the seminar objectives are already beginning to be attained. The only question is the extent of the impact of Harvard's "War College" on other universities and on the Defense Establishment in the near and long-term future. Those who are familiar with last year's beginnings have no doubts that this has been a development of great significance to education and to national security.

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# FOLLOW THE CHAIN OF COMMAND?

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**"F**OLLOW the chain of command" is a well-worn Army injunction. In most situations this requires no explanation for the chain of command is clear. In a corps, for example, the chain extends upward to army and downward to division, regiment, battalion, company, platoon, squad, and individual soldier. But there are complex situations where the same individual may occupy different positions in several chains of command. The organization and the relationship to other headquarters of the United States Army, Europe (USAREUR), illustrate this clearly; the examples are drawn largely from the field of G3 training.

USAREUR is responsible to higher headquarters in four separate chains of command. The same individual may be functioning for USAREUR and the next minute he may put on his Central Army Group (CENTAG) hat. Thus USAREUR is actually two headquarters in one: the national headquarters known as USAREUR, and the international headquarters known as CENTAG. CENTAG as a headquarters does not actually exist apart from USAREUR but it does have an organization chart, and the officers in the various positions are from USAREUR. These officers may put on their CENTAG hats full time, as, for example, when large-scale maneuvers or command post exercises are held. In dealing with the various chains of commands it must be remembered that

while there are four separate command structures, it is frequently the same person who functions in each.

## Four Command Chains

Of the four command chains, three are on the national level and go through United States channels: for United States uniservice problems to the Department of the Army; for policy and planning matters of joint concern with United States Air Force and Navy, to European Command (EUCOM); to United States Embassy in Germany on matters dealing with relationships between the Federal Republic and the United States Army. The fourth chain of command is international, going through NATO channels, to Supreme Headquarters Allied Powers Europe (SHAPE), through Allied Land Forces Central Europe (LANDCENT) and Allied Forces Central Europe (AFCENT). Further details of each of these chains of command and channels of communication follow.

First is the chain of command that leads to the Department of the Army. On strictly uniservice Army matters, USAREUR is responsible to the Department of the Army. In this chain problems concerned with training, logistics, and personnel are involved. Starting with the President of the United States at the top, it goes down through the Department of Defense, the Department of the Army, to USAREUR and its subordinate commands, such as Seventh Army.

The example of ammunition requirements is a good illustration of this chain. USAREUR is continuously concerned with maintaining the combat effectiveness of its troops. The operational mission of

Seventh Army requires that it be ready for combat at all times. To accomplish this task Seventh Army units up to and including battalions conduct field firing exercises and take Army training tests annually at major training areas in Germany. Sufficient ammunition must be on hand to meet the training and testing requirements. Seventh Army units receive allocations based on Table of Allowances 23-100 but occasions have arisen where these allowances were considered inadequate. USAREUR recommended changes to Department of the Army Table of Allowances 23-100 to cover additional allowances to support the training program. Department of the Army processes these requests and informs USAREUR of its decision. This information is passed on to Seventh Army and down the chain of command.

In this United States channel Continental Army Command (CONARC) stands as an advisor in relation to USAREUR. CONARC has no command authority over USAREUR but does provide guidance. USAREUR receives from CONARC considerable information on training procedures. Recently, for example, there was a CONARC letter on "Techniques of Firing and Combat Firing Problems," inclosing a series of training problems to be used as a guide. These problems covered fire control, fire distribution, and squad defensive tactics (day and night) which

USAREUR is involved is EUCOM up to the Joint Chiefs of Staff in the Department of Defense. (See Figure 1.) EUCOM is a senior United States joint headquarters of the Army, Navy, and Air Force in Europe. Component or major subordinate commands of EUCOM are United States Air Force in Europe (USAFE), United States Naval Forces Eastern Atlantic and Mediterranean (NELM), and USAREUR. To illustrate this second chain of command the following problem is cited.

EUCOM submitted to USAREUR for comments a draft of a new policy directive on "Joint Training" involving Army, Navy, and Air Force. USAREUR felt that the requirements for joint training were all stated in such broad language that it believed tangible results would not be obtained to the extent desirable. Accordingly, USAREUR recommended that the specific aspects of the operations to be stressed should be indicated with the tactical air support of ground troops to include aerial resupply of ground forces, and air reconnaissance and air photography to include supply of air photos through established channels based on requests of ground units. Moreover, in this proposal USAREUR recommended to EUCOM that joint training of Army and Naval units in river crossing operations might be substituted for amphibious training if desired.

The third chain of command in which USAREUR is a link is with the United

***There are situations where the chain of command is complex and where the same individual may occupy different positions in several chains of command—this situation exists in United States Army, Europe***

have been proved highly satisfactory by training units. USAREUR sends such material to subordinate commands for their information and guidance. USAREUR also consults frequently with CONARC on a variety of training problems.

A second chain of command in which

States Embassy in Bonn, Germany. This chain was from United States Embassy to EUCOM, but the latter has delegated some of its authority to USAREUR. Hence USAREUR takes orders from the Embassy on a variety of matters dealing with relationships with the German Fed-

eral Republic. These include measures for the maintenance of law and order and in support of United States policy, providing for the implementation of directives of the Embassy, and matters relating to provisions of the contractual arrangements which apply to American forces in Germany. The following is an example of operation within this chain of command. Article 21 of the recent Forces Convention prescribes:

*Within and over their installations, the authorities of the Forces may take all the measures necessary for the accomplishment of their mission, provided that they shall observe German regulations in the fields of public health and safety unless their own regulations in such fields prescribe equal or higher standards. . . .*

In accordance with this article, the Federal Republic advanced the suggestion to the Embassy for the survey of small-arms ranges in the United States Zone by United States-German Survey Boards to determine the current safety situation and whether reduction of the required safety zones could be effected. The Embassy submitted this proposal to USAREUR for consideration, and USAREUR agreed to the Federal Republic's proposal. A conference was held which included representatives from USAREUR, the Federal Republic, and the United States Embassy.

The fourth chain of command is on the international level and runs through NATO channels. The Commander in Chief,

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USAREUR, commands CENTAG (see Figure 2) which is one of the two commands under LANDCENT. The other command is the Northern Army Group (NORTHAG) which consists of the British Army of the Rhine (BAOR), the Canadian Infantry Brigade, and certain Belgian and Dutch units.

CENTAG is a NATO command responsible for developing plans to be executed in case of war and for planning and scheduling large-scale maneuvers of the United States Seventh Army and the French First Army. It is responsible to SHAPE through the NATO chain of command. Following are examples of matters initiated by CENTAG which go to higher, same level, and subordinate headquarters.

On such problems as NATO ranges, CENTAG must make frequent contact with higher headquarters. In Germany some of the ranges have been designated as NATO ranges and are shared by the allies. CENTAG deals with LANDCENT and with SHAPE on all matters concerned with these facilities. SHAPE and LANDCENT are attempting continuously to improve conditions at NATO ranges. To accomplish this LANDCENT has submitted to CENTAG and NORTHAG various ways of increasing range capacity and improving training conditions. LANDCENT requests comments and recommendations of its two subordinate headquarters on the proposed improvements.

CENTAG may initiate action to headquarters on its own level, NORTHAG, which has operational control of NATO ranges in its sector of Germany. One of these NATO ranges is the anti-aircraft range at Todendorf in the northern part of Germany on the Baltic Sea. Here there are four ranges joining one another. "A" range is a United States national range, used exclusively by United States troops. "B," "C," and "D" ranges are NATO ranges, operated by the British for use by NATO forces. CENTAG troops

ties. NORTHAG, on the other hand, has no national "children." It is an independent, truly joint command in the same way as LANDCENT. The BAOR does not support NORTHAG. On the contrary, NORTHAG does BAOR's work which is just the reverse of the situation in CENTAG.

CENTAG frequently initiates action to lower headquarters, that is, to the United



FIGURE 1.

States Seventh Army and to the French First Army. An example of this is the planning and carrying out of a large-scale maneuver. Recently CENTAG requested USAREUR and the Commander in Chief, French Forces in Germany, the two national authorities, that forces be made available for the maneuver. Once these forces were designated, CENTAG issued appropriate Operations Orders to implement the *Cordon Bleu* joint maneuver and assigned the mission to the French First Army, which for purposes of the

maneuver is composed of the United States VII Corps and the French I Corps. This directive was issued by CENTAG without any further contact with the national headquarters of USAREUR and the Commander in Chief, French Forces in Germany.

These are the established chains of com-

participate in these annual conferences.

Occasionally there are dealings with organizations which are completely outside the chain of command. An example of such a unit is the Army Security Agency. The commanding officer of this unit reports directly to the Department of the Army but he receives all his logistical support



mand, but there are some problems of an international nature which are solved by the participation of each nation on an equal basis rather than through these chains. For example, some of the NATO ranges in the British Zone of Germany are shared by several allies. Annual conferences are held to determine the range time which will be allocated to each participating nation. Each NATO nation studies its range requirements and submits them to the NORTHAG Headquarters, prior to the annual coordinating conferences to settle allotments of the NATO training areas. All NATO nations desiring time on these ranges are invited to

from USAREUR through the local area commander.

Another relationship is that with the Military Assistance Advisory Groups (MAAGs) in this theater. USAREUR accommodates these groups by permitting allied nationals to attend USAREUR schools on a space available basis and to participate in observer training of Seventh Army units. USAREUR on occasion also provides a small amount of logistical support such as supplying some training aids and materials.

To further complicate the situation there may be agencies to perform special functions which report to EUCOM. An



example in the European theater is the Joint Construction Agency. It deals with the French Government on all construction matters for United States forces (Army, Navy, and Air Force) in France.

### Conclusion

There are four major chains of command in which USAREUR is involved: the chain concerned with uniservice problems which goes up to the Department of the Army; the chain involving matters of interservice concern, which goes up to EUCOM; the chain that goes to the United States Embassy in Germany on matters concerned with relationships involving the Federal Republic and the United States Army; and the international chain which goes through NATO channels. The picture is further complicated by the handling of some international questions by participation on an equal basis of all the nations

involved, and by the necessity for dealing with organizations which lie entirely outside the chain of command.

As the case in USAREUR clearly indicates, the chain of command is often far from simple. Similar examples could be drawn from other military situations in other overseas commands. The situation is so complex that the new personnel in the command often require months before they have a clear picture of their own position in the different chains of command in which they are involved. Yet all too often the newcomer has to figure this out for himself with substantial loss of time and effort and the danger of misunderstanding. In commands of complex structure all newly assigned personnel should receive thorough orientation in the total organization and its components and in the various relationships in which they may be involved.

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The American people have a very deep and legitimate interest in Europe. Most of us derive from Western Europe. We share the culture and traditions and religion of Western Europe, and there are many bonds which tie us very closely together. But we do not feel that on that account we have any right to demand participation in European affairs.

\* \* \* \* \*

Now, for the third time in this century, we have sent forces back to Europe and again the reason was that there were many in Europe who were afraid and who asked us to do so. That fear is, I imagine, a fear which cannot be allayed by new words and new promises, because the fear was inspired by a country which was already bound by the United Nations Charter not to use force against the territorial integrity or independence of any state. Whether that fear will be allayed by any repetition of that pledge is not for me to decide.

*Secretary of State John Foster Dulles*



# THE CONTINUING DEBATE

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**H**AVE atomic and hydrogen weapons, and other technological developments, nullified or amended the old principles of war beyond recognition? In the fast approaching period when the Soviet Union will have "nuclear parity" with the United States, we are often told that the traditional principles of strategy will be outmoded. Yesterday's military concepts and numbers, it is said, are sharply altered by today's technology.

Yet soldiers such as General Matthew B. Ridgway, with a wide array of professional military, academic, and political support, continue to insist that the infantry is still both "Queen of Battle" and a necessary deterrent to aggression. General Ridgway and his supporters argue that even in the air-atomic age ground combat remains the decisive element in war. They also insist that in overemphasizing airpower the Nation is becoming deficient in the military forces needed to fulfill national commitments and achieve national objectives.

Herein lies a basic professional difference of views. This debate, dramatized anew in midsummer (1955) by General Ridgway's Farewell Letter to the Secretary of Defense, is but another episode in the continuing controversy over composition of the Nation's military forces.

Use the term "force levels" and Penta-

gon officials shake their heads and sigh, "Now, that's the tough one." General Eisenhower once candidly referred to what he called "that one great basic problem" of military affairs in the National Capital, "the division of the dollar." Much of the heat generated from the Pentagon during the past decade has been a reflection of the enduring difference of opinion over military force compositions. Yet this is not a recent development.

## Issue Debated in 1925

Thirty years ago a New York City businessman in a personal letter to President Calvin Coolidge wrote:<sup>1</sup>

*I circulate among many businessmen of this city and at 49 years of age I confess that never in my experience have I heard any question of public policy (except taxes) discussed to such an extent as the question of air defense.*

Although the degree of public interest in defense policy in 1925 may have been exaggerated by President Coolidge's correspondent, the development and use of military aircraft in World War I started a public dispute over national military policy which has endured to the present time. Contrasted with today, 1925 was a period of international quiet and calm. In 1925 little calm prevailed on the domestic scene on the subject of defense policy. A spate of congressional hearings and government commissions focused newspaper attention on the "airpower controversy" generated by military aviation

<sup>1</sup> Calvin Coolidge Papers, Library of Congress, 22 February 1925

enthusiasts such as Billy Mitchell who advocated basic change in our defense structure.

Today, with a powerful potential enemy equipped, as we are, with atomic weapons and delivery capabilities which can obliterate areas measurable in tens of square miles, and with hydrogen weapons which can destroy life throughout hundreds of square miles, the debate over policy continues.

### General Ridgway's Letter

This 1955 debate was dramatically capped in early summer by General Ridgway's letter, in which the then Army Chief of Staff voiced objections to current defense policy. General Ridgway's public dissent on basic military strategy is significant because ours is a Nation where public policy is, at least in broad outline, influenced by popular opinion. This includes defense policy-military strategy, and the organization, mission, and forces of our Defense Establishment which have long been subjects of public debate.

Soldiers, civilian officials, and legislators engage in a continuing debate over what still may be termed the "airpower controversy." Today, perhaps it would be more accurate to call it the "air-atomic power controversy." On the other side of the coin it might also be termed the "controversy over the role of ground forces in an atomic age." Unlike 1925, however,

***The debate has been continuing for a long period. Since the 1920's, as now, it has centered on the question of the effect of technological developments on organization, missions, and forces of the armed services***

airpower is now recognized as vital to defense. The debate arises out of the jurisdictional struggle over the control of airpower, atomic weapons, and guided missiles, and differing views as to what these weapons mean to the traditional principles and institutions of war.

In December 1925 the debate took the form evidenced by this headline in the *Washington Times*:

**COOLIDGE AND PATRICK DISAGREE ON  
CONDITION OF AIR FORCES—NOW JUST  
WHO DO YOU THINK IS RIGHT?**

President Coolidge was quoted in the *Washington Times* as saying: "America is at least abreast of other progressive nations in the technical development of aircraft for military purposes." Major General Mason M. Patrick, then Chief of the Army Air Services, said: "France and Great Britain lead the United States in military aviation, judged by the number of planes available for war purposes."

Does this argument sound familiar? Substitute the name Eisenhower for Coolidge, and Symington, Finletter, or Twining for Patrick; change the reference from Great Britain and France to Soviet Air Forces; and change the date from the 1920's to the 1950's.

The debate then, as now, centered on the question of the effect of technological developments on organization, missions, and forces of the armed services. This is not to suggest that the period of the 1920's had become the "air age," although there was widespread debate on the aviation question. Far from it. Concern over such matters in the 1920's as the obsolescence of horses and mules suggests, as does much other testimony,<sup>2</sup> that "airpower" was largely theoretical at that

time. In the 1950's the air age had long since arrived for there are few who question the indispensability of airpower in modern war, or the military necessity for control of the air.

<sup>2</sup> *Hearings Before President's Aircraft (Morrow) Board, Washington, 1925, pp 16-17 & 1,375*

### Allocation of Resources

There are many who question the current division of resources for the several military services. Today, as in 1925, the meaning of "technological breakthroughs" upon traditional military institutions, doctrines, and national strategy is the subject for heated debate. The annual defense dollar pie is sliced after crucial decisions have been made about national objectives, resources, and strategy. Today, as was the case 30 years earlier, there are a number of competing strategies and plans offered to preserve the Nation's security. These strategic alternatives are being debated by the various contending groups just as they were in the 1920's but the urgency of the debate is somewhat greater now because of the destructive power of modern weapons. The risks of an erroneous policy are obviously greater than at any time in our history—an inflexible strategy could conceivably lead to civilization's doom.

There are two rather constant factors, however, in the debates of both 30 years ago and the present. One factor involves the relationship between technology and weapons on one hand and strategy and doctrines on the other, while the second one involves the economy. How large a defense budget can the Nation afford? Calvin Coolidge and his Secretary of the Treasury, Andrew Mellon, were concerned with this question in quite a different international setting it is true, but in much the same way that President Eisen-

hower and Secretary George Humphrey must be concerned with this second factor today. On this question of weapons and strategy a choice can be made from a number of competing strategies being offered by the various interpreters of modern technology.

### Army Manpower Cuts Opposed

In recent months, for example, we have been advised that present United States military forces are "inadequate in strength and improperly proportioned" to meet our international commitments. We are told this by General Ridgway in his dramatic valedictory as he retired as Army Chief of Staff. General Ridgway further advised us that "present United States military forces cannot support fully America's diplomacy." He speaks out against an "overemphasis on airpower" in prevailing force compositions and military strategy. In testimony before Congress on the military budgets of Fiscal Years 1955 and 1956, General Ridgway had clearly identified himself as an opponent of some vital aspects of the "new look" military strategy, particularly cuts in Army manpower.

### Naval Forces Losing Ground

In an address delivered on 27 June 1955 at the Naval War College, the retiring Chief of Naval Operations, in his own valedictory, sounded the alarm concerning the inadequacy of United States naval power. Although we possess the most powerful Navy in the world, Admiral Robert B. Carney warns that "the existing United States naval forces are not enough to meet the instant and urgent needs of a global war." The Admiral declared that the naval superiority of the United States and her allies is being reduced by the growth of Communist seapower, particularly in the Pacific.

Striking obliquely at the current emphasis on strategic air-atomic power, Admiral Carney warns:

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*We cannot assume that the atom as a weapon is a substitute for everything but must regard it as something additive . . . a wise nation or coalition will never place exclusive reliance upon any one concept or weapon.*

In short, he implies we need more sea-power, with heavier development of the 2-ocean Navy concept.

### Inadequacies in Airpower

Although we are assured by President Eisenhower that current defense programs continue "the emphasis on the development and maintenance of nuclear-air retaliatory power,"<sup>3</sup> Air Force Chief of Staff General Nathan Twining asserts that there are serious inadequacies today in United States airpower. Speaking in Boston on 31 August 1955, General Twining said that "Soviet aircraft production is catching up to ours fast—not only in quantity but in quality."

### Composition of Forces

The Nation's present and recent military leaders are obviously in basic disagreement about the present military strategy, missions, and the present and planned level of forces. There are many facets to this debate, but attention is focused here on one of the more fundamental issues. What effect do atomic weapons and hydrogen devices have on planning the size of ground forces to deter or win a future war? How do these weapons affect the achievement of national foreign policy objectives?

On these points General Ridgway has spoken up forcibly and the debate is by no means ended. Since his retirement from the Army in the summer of 1955, General Ridgway has not stepped down from the rostrum. In a series of articles in the *Saturday Evening Post* of January-Feb-

ruary 1956 he continued to speak up on the issue of composition of forces. He has been particularly critical of the atmosphere in which recent force-level decisions were made, charging that during his tenure as Army Chief of Staff incessant pressures were put upon him to make his views conform to budgetary and partisan political considerations. General Ridgway's arguments will continue to be aired, with the publication of his memoirs promised for the spring (1956), and also due to the likelihood that the question of adequate military strength will become a major issue in the highly charged election year of 1956.

In 1925 much of the heat in the "airpower controversy" was generated by an Army officer who was deeply concerned about the failure of the Government to give adequate attention to the development of military aviation. In 1955 another Army officer stirred up debate by criticizing what he believed to be an "over-emphasis" on airpower. (Meanwhile, a parallel debate is generated by those who feel that adequate airpower vis-à-vis the Soviet Union is not being developed.)

### Opposes Some Aspects of "New Look"

In a hearing before a group of United States Senators considering his nomination to be Army Chief of Staff in the spring of 1953, a United States Senator asked General Ridgway what he would do if he " . . . had the deep conviction that the defense budget had been cut too much and so deeply that it would impair our national security. . . ." Would he speak up and say so, or would he remain silent? The General replied "without hesitation, I would speak up."

During his 2-year tour as Chief of Staff, General Ridgway encountered a widely publicized shift in national strategic policy with which he soon made it

<sup>3</sup> Budget Message of the President, *The Budget of the United States Government*, Fiscal Year 1956, Washington, 1955, p. M27

<sup>4</sup> *Hearing Before the Senate Committee on Armed Services, "Joint Chiefs of Staff Nominations,"* 28 May 1953, pp. 20-21

clear he did not wholly concur. The somewhat revised terms of this policy were announced by Secretary of State John Foster Dulles and called for more reliance on the capacity for "massive retaliation," and less reliance on local defense, or more conventional weapons, including ground forces. A major factor in this so-called "new look" policy was that the revised military program was based on planning for the long haul, and President Eisenhower's belief that "today's technological changes may make yesterday's numbers and concepts obsolete."<sup>5</sup>

General Ridgway "spoke up" in 1954 and 1955 in testimony before Congress when he let it be known, sometimes indirectly, that the proposed cuts in the size of the Army were in his opinion decreasing the combat effectiveness of the Army (contrary to Administration claims). Without direct criticism of present policy, he spoke up in public speeches during this period about the continued importance of the foot soldier, even in the atomic age when one hears talk of "conventional" atomic weapons. He suggested that atomic weapons may call for more ground force manpower rather than less.

General Ridgway's views expressed upon retiring provoked some terse comments from his civilian superiors. Prior to publication of the Farewell Letter, President Eisenhower had used the word "parochial" with reference to General Ridgway's position. Said Secretary Wilson, for example, "I'd be worried if Ridgway didn't believe in the good old Army."<sup>6</sup>

General Ridgway's letter is an important document for the archives of American military history. His views are also expressed in *The Role of the Army*, Department of the Army Pamphlet Number 21-70, issued over General Ridgway's signature as one of his last official acts as

Chief of Staff. The letter is an eloquent statement of advice which is not being followed currently by the General's former military and civilian superiors. However, his successor, General Maxwell Taylor, in a series of public speeches seems to be supporting the Ridgway thesis, with some verbal help from Secretary of the Army Wilber Brucker.

#### Comparison With Billy Mitchell

As previously suggested this is not the first time that vociferous dissent about national defense policy has been expressed by a military figure. Others have objected publicly and far more violently to prevailing policies than General Ridgway. Colonel William (Billy) Mitchell, for example, in his outburst at his superiors, spoke of "incompetency, criminal negligence, and almost treasonable administration of the national defense by the Navy and War Department." This among other things stimulated the public debate over "air defense" referred to by President Coolidge's correspondent in 1925.

General Ridgway's dissent, stated more moderately than Mitchell's was expressed in much the same manner as that of General Hoyt Vandenberg during the latter's service as Air Force Chief of Staff, although Vandenberg's views were quite contrary to those of Ridgway's.

The argument has turned almost a full cycle in 30 years, although airpower is still at the heart of the controversy. Some of the dimly shaped doctrines of strategic airpower of the 1920's are now major principles in prevailing national policy and, as everyone knows, Mitchell has been unanimously vindicated.

The dissenters now are those protesting the *overemphasis* of airpower. "I am opposed to overemphasis on airpower," said General Ridgway. Similar remarks were made by military leaders 30 years ago; the difference is that the ground soldiers (and battleship sailors) were then in the saddle of authority.

<sup>5</sup> President Eisenhower's *Budget Message for Fiscal Year 1956*, p M29

<sup>6</sup> Quoted by Norton-Taylor, Duncan, "The Wilson Pentagon," *Fortune*, December 1954, p 94 ff

The defense policy to which General Ridgway has been objecting is compounded of many more complicated elements than simply questions of military strategy and weapons evaluation. Obviously, military policy never develops in a vacuum, but

Whom may we have to fight? When and where? Under what circumstances and for what purposes? If defense planners knew the precise answers to these basic questions, some of the heated debate over force levels would be certain to disappear.

Selected military forces UNITED STATES	Actual		Planned	
	30 June 1950	31 Dec 1954	30 June 1955	30 June 1956
<b>Military personnel (in thousands):</b>				
Department of Defense, total.....	1,460	3,181	2,949	2,859
<i>Army</i> .....	593	1,326	1,102	1,027
<i>Navy</i> .....	382	687	672	664
<i>Marine Corps</i> .....	74	221	205	193
<i>Air Force</i> .....	411	947	970	975
<b>Major forces, Army:</b>				
Divisions, total.....	10	19	20	18
Regiments, regimental combat teams.....	12	12	12	11
Antiaircraft battalions.....	48	113	122	136
<b>Navy:</b>				
Active ships, total.....	598	1,101	1,066	1,001
Warships.....	237	406	406	405
Other ships.....	361	695	660	596
Carrier air groups.....	9	16	17	17
Carrier antisubmarine squadrons.....	7	15	15	15
<b>Marine Corps:</b>				
Divisions.....	2	3	3	3
Air wings.....	2	3	3	3
<b>Air Force:</b>				
Wings, total.....	48	121	121	131
Combat.....	42	106	108	120
Troop carrier.....	6	15	13	11
<b>Active aircraft inventory, Department of Defense, total</b>	<b>22,685</b>	<b>39,084</b>	<b>38,964</b>	<b>39,549</b>

*Hearings, Department of Defense Appropriations for 1956, House of Representatives, Subcommittee of the Committee on Appropriations, p 80*

is the product of a nation's basic values as they are interpreted and reflected in a contemporary atmosphere, and within a specific institutional framework. What are some of the specifics of this debate? The figures above go to the root of the matter.

In most of our peacetime history it has been difficult to identify our real potential enemy. Billy Mitchell encountered this difficulty in the 1920's when he was fighting for the development of airpower. President Coolidge's simple question to



those advocating military buildup in the 1920's was, "Who's gonna fight us?"

### Growing Rapidly

In the post-World War II years, however, the potential enemy has been more clearly evident and growing rapidly in military capabilities. The cold war and the Korean conflict have produced military budgets of unprecedented size. Yet there has been no basic agreement among our military and civilian leaders as how best to contain the advancement of communism.

The debate essentially stems from disagreement on the "requirements of deterrence." Current policy is based on the belief that the Nation's economy cannot sustain indefinitely preparation for all kinds of wars in all parts of the globe. General Ridgway's powerful dissenting voice suggests that we must be prepared to defeat local aggression in perimeter wars, whether or not nuclear weapons are used.

### Degrees of Preparation

The debate, of course, involves degrees of preparation for various kinds of wars. It is not a question of whether we rely solely on the power of nuclear retaliation in a global war or ground forces in a more "limited war." Neither side in the controversy presents this as an "either-or" proposition. It becomes finally a question of how the limited resources will be allocated. Shall we reduce the size of our ground forces, sustaining the growth of airpower? Or shall we resume the more traditional recent practice of an approximate 3-way distribution of the defense dollar? Or shall we give even more emphasis to air strength? Another question involves the effectiveness of a strategic air deterrence policy when the Soviets have gained "nuclear parity." General Ridgway has suggested that between 1958-

62, United States nuclear-air superiority may "have lost most of its present significance."

Basic to the argument of those on General Ridgway's side in this debate is the belief that what is called an "overemphasis on airpower" not only makes unreliable claims for what airpower can do, but gives us no alternative to a thermonuclear holocaust. Obviously, a spectrum of opinion exists covering the span between the two extremes.

### More Defense for Less Money?

Military spending has dominated the Federal Budget for the past 5 years. Defense policy has shown signs, perhaps inevitably, of becoming a major partisan issue for the budgetary element is obviously a factor productive of partisan debate. Strategy and military doctrines are dependent upon the hardware of violence supplied by civilian managers of the purse strings. A 40 billion-dollar military budget calls for a different type of strategy than a 20 billion-dollar budget.

"More defense for less money" is an attractive political slogan, designed to bring rewards to the political party and administration which seems to produce the same. A maximum ceiling for what may be spent to fulfill a national obligation such as defense must be set finally by some authority. Naturally those professional military men given the responsibility of providing the Nation's defense forces will be inclined to have a specialized, even perhaps "parochial," view of national necessities.

Any responsible government must calculate risks. Although it is unlikely to be so frankly stated, the present Administration seems to have increased the short-term risk in the hope of being better prepared for the long-term risks. The view is taken that as every day passes, and obsolescence occurs in men and matériel, the amount expended for much of our cur-

<sup>7</sup> William Kaufmann, "The Requirements of Deterrence," Center of International Studies, Princeton, 1954



rent military power may be said to have been "wasted." The counterargument may be advanced that the military power of the moment has been a "deterrent" to enemy aggression. Such an argument is won only on an *a priori* basis.

### "Shift in Emphasis"

Official policy in 1955 was based upon what the President called a "shift in emphasis [from pre-1953 policy] to the full exploitation of airpower and modern weapons, by which we are in a position to support strong national security programs over an indefinite period with less of a drain on our manpower, material, and financial resources."<sup>8</sup> By 1955 such a notion had become a "philosophy" of national security. Such a philosophy is based in part upon the President's "long-haul" concept which would "maintain essential military strength over an indefinite period of time without impairing the basic soundness of the United States economy." Another essential part of this philosophy is the belief that "the advent of nuclear weapons has profoundly affected our concepts of military strategy and tactics as well as our national security policies."

Translated into program requirements and force levels, the philosophy has resulted in a new distribution of resources among the various services and weapons systems. As previously indicated this means a sharp reduction of ground force manpower—fewer foot soldiers—and also a reduction in Navy and Marine Corps manpower.

Those responsible for this new program claim for it a net increase in the national military strength. One Pentagon spokesman, later an aide to the President, said:

*What we are doing is shifting some of the emphasis from men to machines,*

*from the old concept of slugging it out with masses of men to beating the enemy with mobility, technological know-how, and with superiority of weapons and equipment.<sup>9</sup>*

This runs counter to a fundamental precept of Army doctrine.

*The decisive element of victory in war is still the trained fighting man who, with his feet on the ground, defeats the enemy's ground fighters, seizes his land, and holds it.<sup>10</sup>*

### Problem of Growing Soviet Power

While General Ridgway is dubious as to whether such a shift from men to machines increases our security, other military leaders and spokesmen seem equally unsatisfied with their lot. While distressing to those who share General Ridgway's views, increased emphasis on airpower, leaves the advocates of more airpower also unsatisfied. "Not enough," they say, while Navy chieftains point to our diminishing naval strength vis-à-vis the Soviet Union.

Under the American system of government, national strategy is conditioned, if not specifically determined, by popular will. This is not so in the Soviet Union where public opinion has little direct effect upon foreign policy and military strategy.

It is unlikely that in the totalitarian Soviet Union, or even indeed in Great Britain, a parliamentary democracy, the military leaders of the various armed services would take to the hustings and campaign for a particular strategic concept. Yet this is happening in the United States. The military services may be classed, in a sense, along with the various other pressure groups operating within the legislative-executive arena of decision making.

<sup>8</sup> Address by Fred A. Seaton, 5 February 1955. Quoted in Senate Republican Memo, "National Defense Under the Republican Administration," 10 March 1955, p. 22.

<sup>10</sup> *The Role of the Army*, Department of the Army Pamphlet Number 21-70.

<sup>9</sup> Budget Message of the President for Fiscal Year 1955, *The Budget of the United States Government*, Washington, GPO, 1954, p. M39.

Whether this is a curse or a blessing of our democratic system is debatable; however, it does point up the value and necessity of a better informed public opinion. Under our system of government, national defense policy—including strategy, military organization, missions, and forces—is affected by popular notions. It seems likely that the competing and sometimes contradictory strategies being advocated may leave a poorly informed public a bit confused.

### Conclusions

One fact does remain clear. This debate, in its broad outlines, has been going on for a long period of time. It is probably a truism that "today's technological

changes may make yesterday's numbers and concepts obsolete." Yet yesterday's institutions and yesterday's concepts, being built into our governmental structure, have a way of clinging tenaciously to the *status quo*.

Those who determine defense policy are faced with the ever-present dilemma of responsibility. This requires that the Nation be prepared to protect its security today; but it must be prepared also for tomorrow, *with tomorrow's weapons*, to deter a possible war, or win it. The mind of man has difficulty in imagining the precise conditions and dimension of a future war. Yet he must succeed, to a degree, in doing so in order to prevent that war.

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There is no easy way to win wars, no superweapon to guarantee victory. In the uncertain world of tomorrow the United States faces the need for greater military preparedness than ever before. As the free world's leader, our Nation seeks to prevent aggression in *any* form. The military role in supporting this national policy is to be able to win wars, large or small, atomic or nonatomic.

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The Army, like its sister services, faces a dual problem in carrying out its part of the national defense. We must always be prepared for a large-scale war if that unpleasant eventuality ever should occur. This, of course, means that we must develop as best we can our ability to mobilize and move sizable Army forces and we must keep our reserve forces in the highest possible state of readiness.

At the same time, the Army must be prepared to deter or defeat smaller scale threats to the free world. The Army believes that in a long period of cold war, such as the world has experienced in the last decade, one of our most important tasks is to have a respectable military posture that will discourage the continued creeping aggression through which many peoples have lost their freedom. For the Army, in particular, this means a goodly number of ready combat and supporting forces, highly trained and ready for action. These ready forces must be truly mobile and they must be transportable rapidly by air or sea to deter or defeat what sometimes is called "local aggression."

Lieutenant General James M. Gavin

# DECISION

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*This article is in consonance with current instruction at the Command and General Staff College.—The Editor.*

**D**ECISION is the responsibility of command. To arrive at a sound decision the commander must be capable of appreciating the external forces of battle (weather, terrain, enemy), which he does not control, as well as the abilities of his own forces. He must possess sound tactical knowledge. Above all he must be capable of considering the whole and, through some process of reasoning, must determine the most successful plan for the conduct of the battle. The application of a reasoning process to the solution of military problems may take many forms, which vary depending upon the scope and complexity of the problem and the skill and experience of the commander. Over 2,000 years ago Sun Tzu, in his treatise, *The Art of War*, concluded:

*The consummate leader . . . strictly adheres to method and discipline. Thus it is in his power to control success.*

*In respect of military method we have:*

*First, measurement;*

*Second, estimation;*

*Third, calculation;*

*Fourth, balancing of chances;*

*Fifth, victory.*

The analogy between Sun Tzu and The

Commander's Estimate (Figure 1) is evident.

Accepting the need for a reasoning process to guide the commander in the solution of military problems, how is such a process employed? Should it be studied and detailed or mental and rapid?

With practice and experience, commanders can absorb details of mission, situation and forces, then analyze, compare, and decide upon a plan by mental reasoning alone. When time permits, however, a formal written estimate may be made, as evidenced by the following excerpt from *Conquer: The Story of the Ninth Army* concerning plans for the encirclement of the Ruhr:

*As they did for every major action of the army, the army commander and his staff followed certain definite and clearly formulated procedures in their own planning, in acquainting the several corps with the plans, and in coordinating the planning and actions of the corps. A complete formal estimate of the situation was prepared by the army staff. After approval by the army commander, the final detailed plan was issued to the several corps. Each corps was required to present to the army commander its formal estimate of the situation and its plans based thereon.*

In any case, whomever the commander or whatever the form, some logical reasoning process must be employed to reach a sound

**Sound decision is the mark of the successful commander. "The Commander's Estimate of the Situation," if properly used, provides a guide for arrangement of facts and arguments leading to sound decisions**

decision. Let us examine "The commander's Estimate of the Situation" to determine how we can employ such a process.

### Mission

The first step in the solution of any problem is the determination of exactly what is to be accomplished. This statement of mission consists of the task(s) and its purpose which clearly indicates the action to be taken and the reason therefor. Understanding the mission is of outstanding importance, for the commander must understand the problem thoroughly before he can solve it intelligently.

To arrive at the mission to be stated in an estimate the commander must carefully consider the tasks assigned by the higher headquarters. The directive from the higher commander may be specific or it may be general in nature. If the latter, the commander must deduce any additional tasks the mission implies, based upon his knowledge of the situation.

Broad missions containing many implied tasks are more frequently encountered at the higher levels of command. The significant paragraph of the directive from the Combined Chiefs of Staff to General Eisenhower for the invasion of Europe is such an example:

*You will enter the continent of Europe and, in conjunction with the other Allied nations, undertake operations aimed at*

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*the heart of Germany and the destruction of her armed forces.*

A wealth of implied tasks were indicated here!

Also at division level the mission received may require the commander to deduce implied tasks. Let us assume that the commander of the 20th Infantry Division (Figure 2) has been given the following mission in an operation order from corps:

"20th Infantry Division: Attack 110315 July.

(1) Seize 'G';

(2) On order seize high ground vicinity 'O'; be prepared to continue the attack to the north."

The commander must decide how far into the future he will project his plan in the preparation of his estimate. It should be limited to that period of action which he can visualize in detail.

The estimate then is a continuing process, for with each major change in the situation the commander must review his estimate and decide whether to continue his present course of action or make a new decision. In the situation illustrated our commander will limit his initial estimate to the action involved in the seizure of "G," giving particular consideration to courses of action which will facilitate his continuation of the attack, later, toward "O."

Is there any task which must be accomplished to ensure the seizure and retention of "G"? Obviously it would be extremely difficult to seize and hold "G" without occupying Hill 410. In this situation then the seizure of Hill 410 becomes a deduced mission and would be expressed in the mission paragraph of the estimate as:

"Attack 110315 July, seize Hill 410 and 'G'; prepare to continue the attack to seize the high ground vicinity of 'O'; prepare to continue the attack to the north."

If the mission spells out or implies

multiple tasks, the commander must establish priorities for their accomplishment. He does not define relative importance in this statement of priority, but indicates the sequence in which the tasks will be accomplished.

### Situation

Following the statement of the mission the next step in the estimate is a consideration of the pertinent facts of the situation (terrain and weather, enemy and friendly situations), the courses of action open to the enemy affecting our mission (enemy capabilities), and possible plans of maneuver designed to accomplish our mission (courses of action). In the written estimate these are listed in separate paragraphs.

The facts considered are those of the area of operations and the enemy and friendly forces which will influence the commander's choice of a course of action, and those which will affect the ability of the enemy to act against him. These factual items provide a ready reference listing to the commander and are used constantly throughout the entire preparation of the estimate.

### Peculiarities and Weaknesses

In particular, the commander will note enemy peculiarities and weaknesses such as flanks of local forces exposed and lightly held, or lack of available replacements; recent and present significant activities such as the fact that the enemy has destroyed dams and bridges or is mining his forward position; and known enemy atomic capabilities, which include information concerning known patterns of use, yields, and delivery means. The information concerning the area of operations and of the enemy is given to the commander by his G2 through verbal briefing or a prepared intelligence estimate.

The facts concerning his own forces are given to the commander by his other staff

officers. When the estimate is written this information will normally be compiled by the G3 in abbreviated form, since much of it will already be known to the commander. When appropriate an analysis of conditions which may affect his own vulnerability to atomic attack will be included.

### Enemy Capabilities

The enemy capabilities are given to the commander by the G2. These are the courses of action which the enemy is

### The Commander's Estimate of the Situation

1. MISSION
2. THE SITUATION AND COURSES OF ACTION
  - a. Considerations affecting the possible courses of action.
    - (1) Characteristics of the area of operation.
    - (2) Enemy situation.
    - (3) Own situation.
  - b. Enemy capabilities.
  - c. Own courses of action.
3. ANALYSIS OF OPPOSING COURSES OF ACTION
4. COMPARISON OF OWN COURSES OF ACTION
5. DECISION

Figure 1.

physically capable of adopting and which, if adopted, will affect the accomplishment of our mission. The commander considers all of the enemy capabilities and, if writing his estimate, incorporates all of them into paragraph 2b. When warranted he includes the relative probability of adoption and evaluates the probability of enemy atomic attack. At a later stage the commander will eliminate from his analysis (but not from his consideration) enemy capabilities which do not assist him

in discriminating between his own courses of action.

Enemy capabilities have their most important application in the commander's estimate. A knowledge of what the enemy can do assists the commander in developing his own courses of action, visualizing the future course of battle, assessing risk to the respective plans, and preventing surprise.

### Courses of Action

A course of action is a possible plan of maneuver open to the commander for the accomplishment of his mission. It is expressed in the same terms as the decision and in sufficient detail to distinguish it from other courses of action under consideration. It conveys in brief language the proposed action of the command and emphasizes the role of the main attack.

To develop a course of action the commander first considers the mission, the characteristics of the area of operations, his own and the enemy situations, and the enemy capabilities (that is, the contents of paragraphs 1, 2a, and 2b, Figure 1). He then examines courses of action recommended by G3 and devises additional ones if appropriate.

He determines the decisive objective and the facts of the situation which affect the accomplishment of his mission. In an offensive situation the commander visualizes his forces on the objective. This visualization includes the general forms of maneuver which will most effectively move his forces to the objective; it must also include the objectives and directions for both main and secondary attacks, and the allocation of forces to these attacks and the reserve. The reason for visualizing the main attack is obvious, but it is also essential that the visualization of the secondary attack be complete in each course of action. The secondary attack is employed to assist the main attack, and it does so by seizing critical terrain, pre-

venting enemy disengagement, deceiving the enemy as to the location of the main attack, and forcing a fairly early commitment of the enemy reserve at an indecisive point. Without the visualization of the action of the secondary attacks, any inference drawn from the effect of an enemy capability upon a given course of action would be inconclusive. To fully appreciate the operation of any scheme of maneuver the effect of its whole must be considered—this is essential for a proper analysis.

Let us refer again to Figure 2 and briefly consider a course of action which might be stated as follows:

"Division attacks 110315 July employing 3 regiments (-1 battalion) in the direction Hill 167—Hill 275—Hill 410, seizes Hill 410 and 'G'; prepares to continue attack to seize high ground vicinity 'O'."

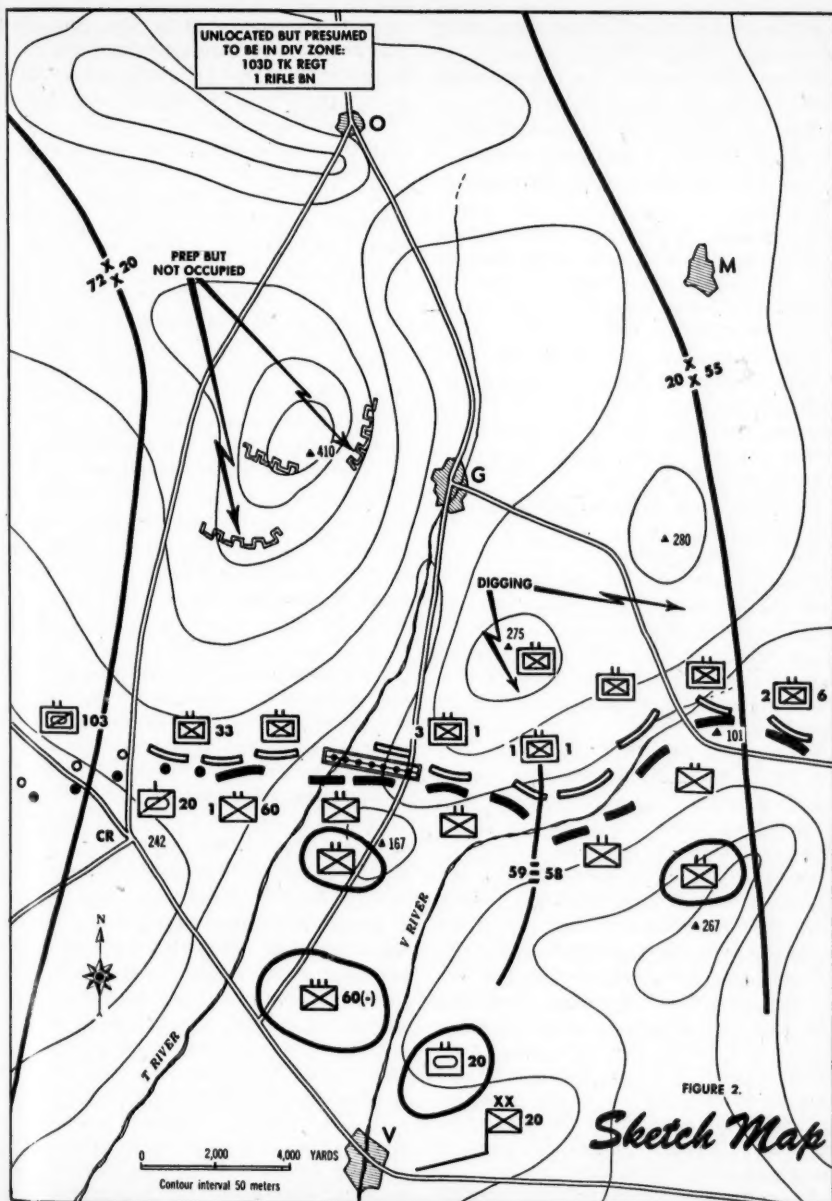
### Complete Picture

Although the statement of the course of action is proper in its emphasis of the role of the main attack, the commander with but this limited picture of the action of his command cannot accurately analyze the effect of an enemy reinforcement or defense capability on this particular plan. Will the enemy be able to shift his forces to counter the main attack? Obviously no answer can be given unless the objective and direction of the secondary attack or attacks are considered. Add to this course of action, however, a visualization of those objectives and directions for the secondary attacks and their effect can be analyzed (Figure 3). If conditions and time permit (as in the detailed planning for the assault on the beaches of Normandy), each course of action may be developed into a complete plan to facilitate a more thorough analysis.

As a guide to developing possible courses of action the commander should ask himself:

What can I do to accomplish the mission? (Attack, defend, delay.)





*When* can I do it? (Without delay, early tomorrow, 110315 July.)

*Where* can I do it? (In the direction A-B-C, along the line A-B-C.)

*How* can I do it? What formation? (Regiments in column, 3 regiments abreast.)

*Why* am I doing it? (The objective, implied tasks.)

If the plan of the commander contemplates the use of atomic weapons, the *How* should include enough information of the atomic fire support to distinguish one course of action from another.

What courses of action might the commander envisage if given the mission and situation depicted in Figure 2? As we know he has been given certain elements in the mission received from the higher headquarters; they are:

*Who*—the 20th Infantry Division.

*What*—attack.

*When*—110315 July.

*Why*—to seize Hill 410 and "G."

In this situation the variants are the *Where* and the *How*.

Let us assume that G2 has indicated that this terrain contains three favorable avenues of approach which are, from west to east:

1. Crossroad 242—Hill 410.

2. Hill 167—Hill 275—Hill 410.

3. Benchmark 101—Hill 280—Hill 410.

There are, then, three directions of attack (or *Wheres*) to consider.

As to the *How* or formation for the attack, it would seem that any attack with three regiments in column would not be favorable because of the frontage involved and the fact that two regiments are already committed. We have remaining two choices of formations—two regiments abreast and one in reserve or three regiments abreast. Since we have found the variants to be the *Where* (three choices) and the *How* (two choices) the commander finds that initially he has six possible courses of action to consider.

After he has determined the possible

courses of action open to him, and they may be many, he must mentally weigh them to determine which are feasible, tactically sound, and offer a reasonably good chance of accomplishing the mission. Each course of action should be given a rapid mental examination to determine whether or not it is within the means available to the command and within time limitations imposed; whether it capitalizes on our strength and exploits enemy weakness; or whether it is more costly in terms of matériel and human expenditures and obviously inferior to other courses. The courses retained after this initial examination are those which the commander's judgment, knowledge of tactics, and facts of the situation indicate have a reasonable chance of success. The courses eliminated at this point are those which are so obviously inferior or tactically unsound that further testing is not required. In the written estimate the retained courses of action are listed in paragraph 2c.

### Analysis

At this point in the reasoning process the commander has developed several courses of action which he feels have a reasonable chance for success. To determine the advantages and disadvantages of each of them, to visualize the future course of battle, to provide a basis for comparison, and to further refine the *When*, *Where*, and *How*, the commander will analyze the courses of action.

Before he begins the actual analysis the commander will review the enemy capabilities given to him by the G2 to determine their broad effect on each of the courses of action. If any given enemy capability has an equal or negligible effect on all of the courses of action, the commander eliminates it from the analysis. The criterion in this case is—does the enemy capability assist the commander in choosing between his courses of action. If it is not discriminatory, it is eliminated.

However, the eliminated capability is still considered by the commander as to its over-all effect on his mission.

In the analysis the commander determines the probable outcomes of each of his courses of action when opposed by each of the retained enemy capabilities. The method or style by which this determination is accomplished is immaterial and will vary with the individual. One method is to visualize the movement of the force over the ground and against the enemy, in logical sequence from the initial contact to the final objective. This visualization includes a consideration of the facts of the situation (paragraph 2a), their effect on the particular course of action, and the degree of mutual support which exists between the main and secondary attacks. Each analysis consists of *one course of action set off against each retained enemy capability* and is complete and separate from the others.

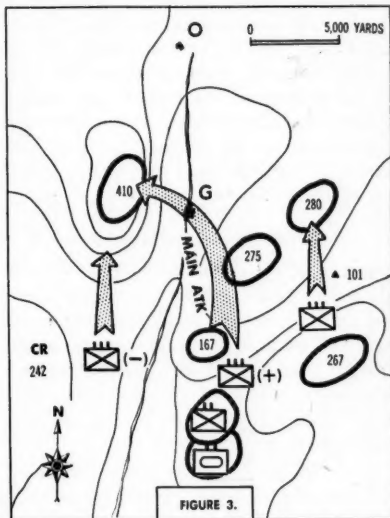
#### Commander Visualizes

As the commander visualizes the step-by-step development of his courses of action, he can readily identify the advantages and disadvantages of each. He can also evaluate the influence, great or small, of the factors portrayed in the situation (effect of terrain, enemy weakness, own strength). From this evaluation certain factors will appear to exert a major influence on the courses of action and will be used as a basis for comparison. These factors are those which increase (or decrease) the degree of potential success in accomplishing the mission, and upon which the decision will hinge. They are termed "governing factors."

During the course of his analysis the commander may introduce a new course of action, modify an existing one, or eliminate one or more entirely. No comparison of his own courses of action, one against another, is made during the analysis phase of the estimate, for at this step the com-

mander does not have a valid basis to effect a comparison. The analysis provides this basis through the development of the influencing factors and will be used in the comparative step in the estimate.

In a situation involving the use of nuclear weapons the commander will determine how the use of such weapons by either side can enhance or impede the success of his courses of action. He will then weigh the degree of risk to his com-



mand and consider active and passive measures which can be taken by his own forces.

#### Comparison

The purpose of the comparative step in the estimate is simply to determine the best course of action. Here the commander selects those governing factors which his analysis has indicated as the influencing factors or terms of comparison. Under them the significant advantages and disadvantages of the courses of action are grouped. At division level most of the arguments for or against a course of action

will fall under one or more of the following factors: terrain, enemy capabilities, enemy dispositions, and own (present and future) dispositions.

In considering the advantages and disadvantages which pertain to a given course of action there is no prescribed arrangement or rule directing under which factor any particular point is considered; nor is it of great importance. For example, the terrain over which a course of action is directed may be eminently suitable for armor. One commander may consider this advantage under *terrain* while another, equally capable, may consider the tactical advantage of the armor and place it under *own dispositions*. It is necessary, however, to avoid overemphasis of some relatively unimportant point by repeating it under several factors.

#### Other Factors Applicable

Of course the commander is not restricted to the four factors mentioned above, nor are they always applicable. Other factors such as logistic support, time, atomic abilities, weather, and routes of communication may be considered with or in place of the four, particularly at levels higher than division.

After the commander has decided upon the governing factors of his situation he lists under each factor the advantages and disadvantages of each course of action. He then compares each of the courses in the terms of the governing factors and reaches a subconclusion as to their relative merit. Finally, the commander determines the relative importance of the governing factors.

In no two operations will the governing factors have exactly the same weight. The value assigned each one of the factors will depend solely upon the commander's opinion of the degree to which that factor increases his chances for success or improves the degree of success he may attain.

Having considered the influence of each of his factors, the commander then compares the subconclusions in the light of their varying influence and makes an over-all conclusion as to *the* course of action which appears to offer the greatest prospect of success. If several courses offer equal chances of success, the course of action is chosen which best facilitates future action. The best course of action is that one which will produce the greatest return for the effort involved, commensurate with accomplishing the mission and the risk entailed.

#### Decision

The decision, paragraph 5 of the written estimate, is the formal statement by the commander of his intentions—what the command will do to accomplish the mission. In its complete form it expresses the *Who*, *What*, *When*, *Where*, *How*, and so much of the *Why* as is necessary to enable the staff to begin its planning.

The decision by the commander of the 20th Infantry Division, as shown graphically in Figure 4, might be stated as:

*Who*—Division.

*What*—Attacks.

*When*—110315 Juy.

*How*—employing the 60th, 59th (-1 battalion), and 58th Infantry from west to east, 60th Infantry makes main attack.

*Where*—in the direction Crossroad 242—Hill 410.

*Why*—seizes Hill 410 and "G"; prepares to continue the attack to the north to seize the high ground in the vicinity of "O."

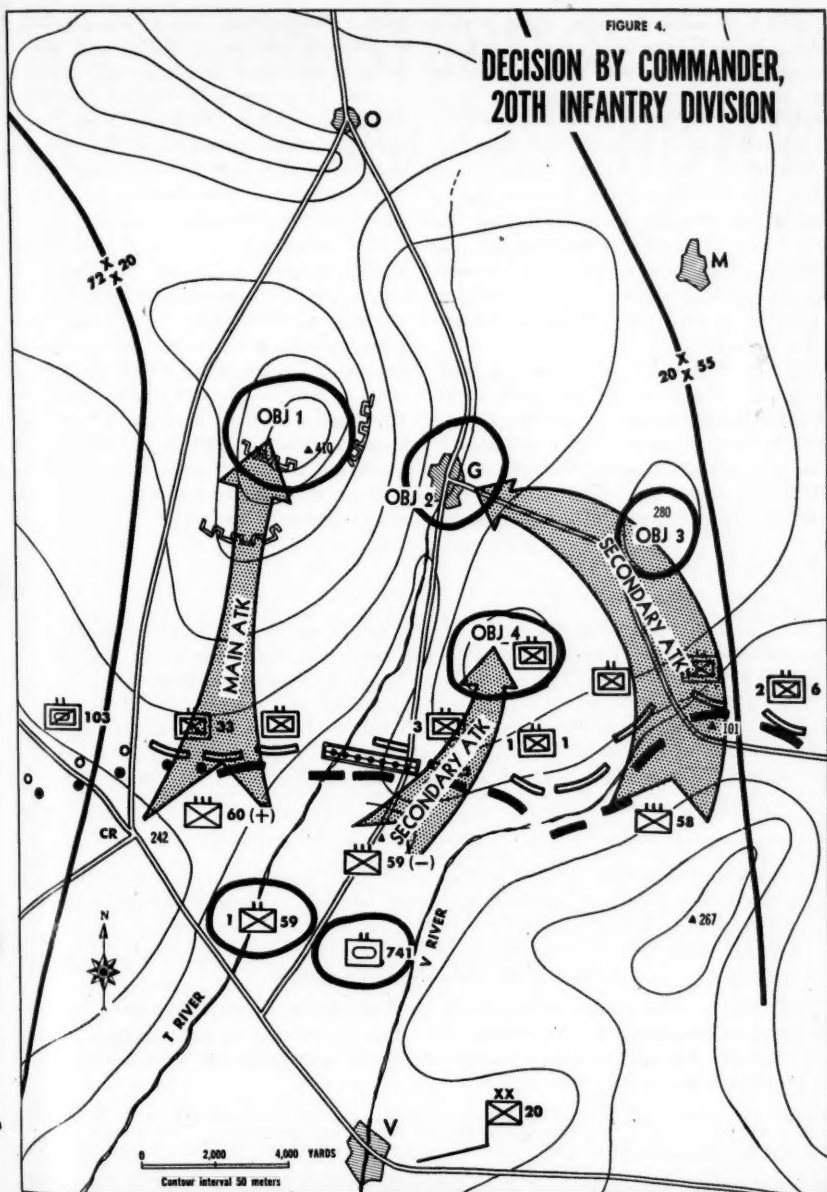
#### Conclusion

There is no prescribed order in which the elements of the decision should be arranged but the statement should follow a logical, natural order of development.

To solve any problem, military or otherwise, some process of logical reasoning must be employed which provides for an orderly arrangement of argument. The Commander's Estimate of the Situation

FIGURE 4.

# DECISION BY COMMANDER, 20TH INFANTRY DIVISION



is such a process. Properly used it provides a guide for the arrangement of facts and arguments leading to a sound decision. For the experienced commander it is a mental checklist to ensure consideration and evaluation of all important factors.

Vital to the success of this mental process is the ability of the commander to analyze the problem to be solved for he must recognize the tasks both specific and deduced before he can determine the best way to accomplish them. This analysis is expressed by his statement of the mission in his estimate.

Equally vital is the ability of the commander to visualize the employment of his entire command in each of the several possible plans he considers for the accomplishment of his mission. To *hastily* or *partially* consider the effect of each element of his force—main attack, secondary

attack, supporting arms, reserves—will unerringly lead to a faulty and unconvulsive decision. Analysis of opposing courses of action must include the action of the entire force involved to ensure the comprehensive evaluation of the degree of success each course of action may attain.

The form for the estimate does not in itself guarantee success, nor does it provide a substitute for reason—it is merely a thought process, a tool of reason. No magic formula exists with which the commander, with the insertion of facts into preconceived slots, can turn a mental handle and crank out a sound decision. It must be used again and again, employing the user's own logic and arguments, until through practice and experience he acquires the ability to make sound decisions.

Sound decision is the mark of the successful commander.

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You do not need to look into a crystal ball to see the nature of tomorrow's warfare. You need only to look into the heart of reality. There you will see that the next war, if it comes, will come suddenly, leaving no time-cushion for defensive preparations. It will be widespread, for the greater part of today's world is divided into two armed camps. It will be, further, a fight to the finish, a contest of ideologies, whether or not nuclear weapons are used. In all probability it will be involved and long and debilitating, costly in matériel and men.

\* \* \* \* \*

Tomorrow's war, at its outset, will call for masses of individuals trained to handle the involved machinery of war. Complicated equipment, weapons of spiraling complexity, call for men of high intelligence and specialized training. This training cannot be done after the signal for Condition Red is sounded . . . it must be done while there is yet time.

But as vital as the trained soldier will be at the outset of the next war, more essential will be the trained unit. Trained units, properly equipped, on the balls of their feet will give this Nation the heavy battalion it will need to assure victory in the next conflict.

*Under Secretary of the Army Charles C. Finucane*



# THE STUDY OF AMERICAN MILITARY HISTORY

Brigadier General Paul M. Robinett, *United States Army, Retired*

*This article and book list are in consonance with the recommended reading list at the Command and General Staff College.—The Editor.*

THE study of history is one which can be carried on without a teacher and even without access to a large library. This is indeed fortunate for officers of the military services are of necessity widely scattered and subject to frequent changes of station. Besides, no profession can benefit more directly from the study of history than the military, for as Marshal Foch has said, "... no study is possible on the battlefield; one does there simply what one can in order to apply what one knows."

But study time available to an officer is limited and becomes even more limited during periods of national emergency and when increased rank means added responsibility. At a time when one emergency blends into another, it is, therefore, more important than ever that an officer should avoid wasting unrecoverable time on historical material of questionable value. One of the simplest ways to do this is to avoid books of doubtful value and to have a planned reading program.

Military books, like others, vary in

quality, each reflecting the character of the author and the purpose he had in view. Some writers may take a historical subject, but write a piece of fiction. Unthinking readers praise the book as interesting, forgetting that history is a science and not literature. Some books are written to deceive. Some few, however, show an author with a judicious temperament who spares no pains to search for evidence and, when found, weighs it carefully and intelligently. These are the best authors and must be found by the historian and student of history if precious time is to be conserved and history is to be advantageously used by the Army.

A general idea of the scope and quality of a military history or biography may be obtained by reading the book reviews published coincident with the release of the work by the publisher. Reviews of this type, particularly those in newspapers, and, to a less extent, in the commercial magazines, are not always careful or objective. Reviews in such media are sometimes influenced by the author, publisher, or editorial policy of the newspaper or magazine concerned.

Many newspapers concoct their reviews from publishers' advertisements and notices. Reviews of historical works in learned journals are infinitely preferable to

***Military knowledge cannot be acquired entirely at the service schools and colleges. Much of it must be obtained through the initiative and personal efforts of the officer himself by studying on his own time***

newspaper reviews, for such journals generally use the services of recognized experts in their fields. But the final judgment on the value of a military work is the responsibility of the student or historian who should develop a system of examining such works. A system has been suggested by one of the Army's eminent historians, Colonel Oliver L. Spaulding. Somewhat modified it is as follows.

#### System of Examining

The first clue to the value of a book is found on the title page. The title page often gives an indication of the author's official or professional standing, such as military rank or academic connections and degrees. It is also of value to know under whose auspices the book was written. When this information is not contained on the title page, it is usually found in the preface. The author may be a most distinguished person along certain lines, but it does not follow that all books by authors who appear to lack professional qualifications should be rejected. They may prove very useful when properly evaluated. Sometimes the very best of books have been written by men whose qualifications, as given on the title page, do not appear adequate.

A second clue to the value of a book is found in the preface. This should be

*Brigadier General Paul M. Robinett, Retired, has been a frequent contributor to the MILITARY REVIEW. His most recent article, "Peripheral Wars," appeared in the March 1956 issue. He is a graduate of the Command and General Staff School (1934) and the Army War College (1937). He was Chief of the Plans and Training Section of G2, War Department, and later Assistant Secretary of the War Department General Staff. During World War II he commanded the 13th Armored Regiment in North Africa and Combat Command B, 1st Armored Division in Tunisia. He was assigned as Commandant of The Armored School, Fort Knox, Kentucky, during 1944 and 1945, and since 1948 he has been Chief of the Special Studies Division, Office of Military History.*

read carefully. It should tell why and how the book was written and furnish an indication of the writer's point of view. It frequently tells from whom the author has had advice and assistance in the preparation of the book. It may give a review of the material used and should tell whether the writer is presenting any newly discovered evidence or a new point of view, if it is a new book on a subject already thoroughly covered.

A third clue to the value of the book is the bibliographical note or bibliography and the nature and extent of the documentation. The reader should determine whether the book is a mere reinterpretation of events based on secondary sources, or an original contribution based upon new or heretofore unused sources. Even a new presentation of old material, however, need not necessarily damn the book. A great number of works have been produced on a certain subject over a period of years. Sometimes there is a positive need for a new and better presented book on the same subject.

A fourth clue which gives information concerning the specific value of a book for a certain purpose is found in the table of contents, printed at the beginning of a book, and in the index, printed at the end. These parts of a work will furnish a clue as to whether or not the book covers the prescribed subjects desired. A military history or biography which lacks a comprehensive index covering the broad range of all military activities, although otherwise of high value, may be of limited value, because it lacks the key which would make its contents readily available.

A systematic use of book reviews and of the four clues described above will lead to the discard of many books and will direct the student's attention to the particular parts of those he wishes to study.

The military knowledge which Marshal Foch believed necessary cannot be acquired

entirely at the service schools and colleges. Much of it must be obtained through the initiative and personal effort of the officer himself and on his own time.

Any satisfactory program for self-improvement should be progressive and appropriate to the grade of the student. The works included should provide the officer with professional background *appropriate to his level of responsibility* and eventually with an ever-broadening understanding of military art and science and of the relationship of military policy to the foreign and economic policies of the United States. Thus it is that the program should help develop an officer corps possessing the wisdom essential to the successful performance of duties in the higher staff and command positions. In the past this progressive aspect of historical study has been neglected with the result that officers have tended to prepare themselves for the role of war lord, such as Alexander, Frederick the Great, or Napoleon, or a great military leader such as Hannibal, Scipio, Caesar, Marlborough, Washington, Grant, Lee, or Foch, instead of preparing for their more probable assignments or fields of responsibility and the ones next above. As a result, too many American military men have neglected the basic aspects of their professional preparation.

According to the best authorities, man and his reactions to combat have changed less than other elements in war. Regardless of improvements in matériel, man still reacts very much as he has always reacted in battle. And he probably will always react in about the same way. It is for this reason that the closest attention must be given to the fighting man and to the basic problem of leadership. These two subjects constitute the foundation upon which all other knowledge of the military art and science should be based. Accordingly, the study of these subjects should begin early in an officer's career

and continue, in ever-expanding fashion, throughout his service.

### Solidly Based on Problems

The study of military history should also be solidly based on the problems of the squad, platoon, company, battalion, combat team or command, and division. Here, where results of decisions and actions are most immediate, wisdom and a knowledge of American military operations gleaned from the study of history can be used most advantageously. Unfortunately, material dealing with these problems is rather limited. Although some progress has been made to fill the void much work remains to be done in the field of small unit history.

Students of the past should also consider events in light of the times and conditions under review. The geography, communications, population, education and culture, military forces and armament, resources, industry and manufacturing, scientific development, and political, religious, economic, medical, and sociological conditions of the period must be understood before events can be properly evaluated and lessons derived therefrom. Quite obviously this is a difficult task.

### Profound Influence

Finally, the military student should be familiar with the works of the military philosophers because they have had a profound influence upon military thinking and literature and, therefore, upon the operational manuals or field service regulations of nearly all nations. The great military thinkers have not belonged to any one race or time. They have all been profound students of history and many of them have also had personal experience in war. Sun Tzu in *The Art of War*, Vegetius in *The Military Institutions of the Romans*, Clausewitz in *On War*, Jomini in *The Art of War*, Du Picq in *Battle Studies*, Von Schlieffen in *Cannae*, Mahan in *Influence of Sea Power on History*, Foch in *Princi-*

ples of War, Douhet in *The Command of the Air*, Fuller in *Foundation of the Science of War*, De Gaulle in *The Army of the Future*, Kingston-McCloughry in *War in Three Dimensions*, and others have used history to distill strategical and tactical principles which affect the conduct of war. Other scholars such as Machiavelli in the *Prince* and the *Discourses*, Grotius in *The Law of War and Peace*, De Vattel in *The Law of Nations*, Lea in *Valor of Ignorance*, Fairgrieve in *Geography and World Power*, Mackinder in *Democratic Ideals and Reality*, and Simonds and Emeny in *Great Powers and World Politics* have treated some of the overriding factors, such as political, economic, and geographical, which concern the conduct of war.

#### Comprehend Historical Lessons

A careful study of such works should enable the military student who has mastered the basic subjects of his profession to comprehend the lessons that are to be learned from history. The wisdom acquired by reading and studying the experiences of others should enable him to recognize in any given situation the time and place for the application of principles to the solution of current problems and thus avoid the misinterpretation or overemphasis of certain principles which has proved so catastrophic to other nations in the past.

The progressive reading list which follows at the end of this article is adjusted to length of service and, therefore, to grade and to the Army school system. Any military student can use the list to advantage even if never admitted to the higher military colleges. But no military student can acquire the maximum benefit from the Army schools and colleges without systematic historical study because military history is the foundation upon which instruction in leadership and in strategical, tactical, and logistical matters is based.

Few individuals will be able to study all the books listed. Each should, however, examine the books and select the ones that have special appeal. Other works should also be added according to the tastes, interests, and assignment of the individual because the list does not include all that a military student should study. Each arm and service and each special assignment will require additional reading and study. Besides there are broader fields of culture and science with which forward-looking officers must keep abreast. In this connection it is well to consider the words of Mahan and the admonition given by him in a less hectic period of our history:

... master and keep track of the great current events in history contemporary with yourself, appreciate their meaning. Your own profession, on its military side, calls of course for your first and closest attention; but you all will have time enough to read military history, appreciating its teachings, and you can also keep abreast of international relations to such an extent that when you reach positions of prime responsibility, your glance—your coup d'oeil, to repeat the French idiom—will quickly take in the whole picture of your country's interests in every emergency, whether that be pressing or remote . . . aim to be yourselves statesmen as well as seamen. . . .

In reality, the books included here are but the basic works with which all well-informed American officers should be familiar. If the books are not available in post, camp, or station libraries, they probably can be secured on an interlibrary loan from one of the larger libraries generally found at the service schools or colleges or from the Army Library, Pentagon, Washington 25, D. C.

Finally, as a word of caution, it is well to consider the views of Lieutenant General John M. Schofield, who had long, im-

portant, and varied experience in the Army and the War Department. He has observed that study or scholarship alone cannot fully qualify a man for a responsible role in war, either "as commanders

in the field, for which no amount of theoretical education alone can qualify a man . . . or as military advisors." For such important assignments nothing can take the place of *practical experience*.

## A PROGRESSIVE COURSE OF STUDY IN AMERICAN MILITARY HISTORY

### Historical Reading in First 5 Years' Service

#### General

The Constitution of the United States of America and the Declaration of Independence	
The U. S. Army in War and Peace	<i>Spaulding</i>
History of the United States Navy	<i>Knox</i>
Decisive Battles of the United States	<i>Fuller</i>
The American Republic	<i>Beard</i>
Roots of Strategy	<i>Phillips</i>
War Through the Ages	<i>Montross</i>
The Foundations of the Science of War	<i>Fuller</i>
Armament and History	<i>Fuller</i>
The Military Staff	<i>Hittle</i>
A History of Sea Power	<i>Stevens &amp; Westcott</i>

#### The Fighting Man

Battle Studies	<i>Du Picq</i>
The Private Soldier Under Washington	<i>Bolton</i>
The Life of Johnny Reb	<i>Wiley</i>
The Life of Billy Yank	<i>Wiley</i>
A Rifleman Went to War	<i>McBride</i>
Men Against Fire	<i>Marshall</i>
The Medal of Honor of the United States Army	<i>Department of the Army</i>

#### Leadership

Psychology for the Armed Services	<i>Boring</i>
Leadership, Field Manual 22-10	<i>Department of the Army</i>

#### Preparation for Leadership in

America	<i>Robinett (ed.)</i>
Autobiography	<i>Franklin</i>
Montcalm and Wolfe	<i>Parkmann</i>
General von Steuben	<i>Palmer</i>
Memoirs of the War in the Southern Department of the United States	<i>Lee</i>
Light-Horse Harry Lee	<i>Boyd</i>
Anthony Wayne	<i>Wildes</i>
"First With the Most" Forrest	<i>Henry</i>
The Life of Major General George A. Custer	<i>Whitaker</i>
War Years With Jeb Stuart	<i>Blackford</i>
Ranger Mosby	<i>Jones</i>
Fix Bayonets	<i>Thomason</i>
Company Commander	<i>MacDonald</i>

#### Operations

Appeal to Arms—A Military History of the American Revolution	<i>Wallace</i>
Indian Fighting Army	<i>Downey</i>
The Defense of Duffer's Drift (Fiction)	<i>Swinton</i>
Infantry in Battle	<i>Infantry School</i>
Small Unit Actions in Korea	<i>Gugeler</i>
Small Unit Actions During the German Campaign in Russia	<i>DA Pamphlet 20-269</i>
Three Battles: Arnaville, Altuzzo, and Schmidt	<i>MacDonald &amp; Mathews</i>
Combat Support in Korea	<i>Westover</i>

## Historical Reading—5 to 10 Years' Service

### General

The Art of War .....	Sun Tzu
Cannae .....	Von Schlieffen
On War .....	Clausewitz
The Principles of War .....	Foch
Machine Warfare .....	Fuller
The Army of the Future .....	De Gaulle

### Leadership

Power of Personality in War .....	Freytag-Loringhoven
Life of Major General Nathanael Greene .....	Greene
Tarnished Warrior, Major General James Wilkinson .....	Jacobs
Oliver Hazard Perry .....	Dutton
Captain Sam Grant .....	Lewis
Stonewall Jackson and the Civil War .....	Henderson
Lee's Lieutenants—A Study in Command .....	Freeman
Personal Memoirs of General W. T. Sherman .....	Sherman
Sherman—Fighting Prophet .....	Lewis
Jeb Stuart .....	Thomason
The Life of Major General George H. Thomas .....	Van Horne
Personal Memoirs of P. H. Sheridan .....	Sheridan

## Historical Reading—10 to 15 Years' Service

### General

Sea Power in the Machine Age .....	Brodie
Toward a New Policy of Sea Power: American Naval Policy and the World Scene .....	Sprout
Democratic Ideals and Reality .....	Mackinder
The Geography of Peace .....	Elliott
The Great Powers in World Politics .....	Simonds & Emeny
Plenty of People .....	Thompson
The North American Triangle .....	Brobner

### Leadership

The Naval Genius of George Washington .....	Knox
Winfield Scott, the Soldier and the Man .....	Elliott
Robert E. Lee .....	Freeman
Robert E. Lee, the Soldier .....	Maurice

Sheridan, the Inevitable .....	O'Connor
Commanding an American Army .....	Liggett
Our Jungle Road to Tokyo .....	Eichelberger
War as I Knew It .....	Patton
General Wainwright's Story .....	Wainwright

### Operations

Our Struggle for the Fourteenth Colony—Canada and the American Revolution .....	Justin H. Smith
The Influence of Sea Power Upon History .....	Mahan
The War of 1812 .....	De Weerd (ed.)
Sea Power in Its Relations to the War of 1812 .....	Mahan
The War With Mexico .....	Justin H. Smith
American Campaigns .....	Steele
Lessons of the War with Spain .....	Mahan
America in the China Relief Expedition .....	Daggett
Evolution of Tactical Ideas in France and Germany During the War of 1914-18 .....	Lucas
The Second World War 1939-45 .....	Fuller
The Approach to the Philippines .....	Robert R. Smith
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# HUKS IN THE PHILIPPINES

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**W**HEN the Japanese invaded the Philippines in World War II, the people took the occupation in their stride. Although the people realized that their arms were defeated, they faced the situation with the typical self-confidence that is characteristic of an agricultural community reliant on the family and village system. They maintained an admirable solidarity.

In central Luzon the peasant fought. During the day he took up his plow. During the night he struck. Central Luzon became a no man's land for the aggressor. Out of this first struggle was born the Hukbalahap (Huks), the peasant militant movement of resistance. This organization became the chief concern of the Japanese police and the puppet government.

The leader of the Huks was Luis Taruc, a Filipino born of peasant stock. He participated in forming the Huk movement which was conceived in December 1941 and formally organized on 29 March 1942 at Cabaio on the Pampanga border. "Hukbalahap" is a word coined from the syllables of the Tagalog title *Hukbo Ng Bayan Laban Sa Hapon* or People's Army (To Fight) Against Japan. The original group of Huks were Communists, intellectuals, politicians, and army personnel. A report to Colonel Gyles Merrill, a guerrilla leader,

in March 1944 stated that the Huk "numbers among its members an estimated 30 percent of properly inducted United States Army Forces Far East men."

The Huks attempted cooperation with other guerrilla forces in central Luzon. On 21 May 1942 Luis Taruc effected liaison with Lieutenant Colonel Claude Thorp who was then in command of other guerrilla activities in central Luzon. With Taruc, Thorp drew up a plan of resistance to harass the enemy rear and "make this island uninhabitable for the enemy."

## Coordination

Efforts to coordinate the guerrilla forces were pressed and on 7 July 1942 Colonel Thorp's staff entered into agreement with the Huk military committee to form a joint guerrilla command in central Luzon. Main points of the accord were mutual collaboration with the establishment of a central headquarters of the Central Luzon Command, independent action of the Huk on organizational or political matters, and mutual assistance between the guerrilla units on military supplies and equipment.

When Colonel Thorp was captured by the Japanese and executed at Tarlac, the pact did not materialize. Thorp's successor, Colonel Merrill, kept in touch with Taruc because he recognized the fighting ability of the Huks and was anxious to coordinate guerrilla activities.

The political activities of the Huks brought about many clashes with other guerrilla groups. Conflicts with other guerrilla units were frequent and by mid-1944 the Huks were actively fighting their guer-

rilla neighbors. When they realized that the other guerrilla forces were receiving arms and equipment from the Americans, the rivalry flared into open warfare. For example, there was a clash between the Huk squadron under Colonel Cantindig and the San Isidro unit of Anderson's Guerrillas under Irineo Alberto which broke out in March 1945 at San Isidro, Nueva Ecija. The fighting lasted 3 days and was ended by the arrival of the American forces.

The relations between the United States Forces in the Philippines (USFIP) under Merrill and the Huks deteriorated, however, despite the efforts of Merrill and Huk leaders to come to a common understanding. This was partly due to the tactlessness of officers under Merrill's command whose air of superiority was resented by Huk leaders. The basic issue was, of course, political. Terming the puppet officials, rich landowners, and pro-American Filipinos as "tools of imperialism" and "instruments of capitalism," the Huks directed much of their efforts toward elimination of these elements which they believed would be an obstacle to the attainment of their political and economic motives.

Lieutenant Colonel Roy Tuggle, United States Army, who was assistant to the executive officer of the USFIP, wrote the Huks a few days before the Leyte landing. He said:

*Any organization which fails to coop-*

***The remaining tasks for the Philippines still loom formidable and difficult. In the military field the army must destroy the hard core of the HMB group and further reform is needed in the socioeconomic sphere***

*erate will be regarded by incoming troops as unlawful armed bands . . . United States Army does not recognize any political aims or ambitions, and it is the position that in time of war, the only political activity which is legal is political*

*activity aimed at maintenance of the loyalty of the masses of the established, the legal government.*

The efforts of reconciling the USFIP and the Huks continued until the American landing on Luzon in January but deep-rooted suspicions already separated the groups. Tuggle wrote Taruc on 16 January 1944:

*I am instructed to also issue warning to all guerrilla units that the killing of any person or the taking of any Filipino, except in case that person may be proved beyond all question of doubt to have attacked with armed force or to have actually betrayed the guerrilla cause to the enemy, will be considered murder or kidnapping with threat to murder.*

#### Attacks on Japanese

During 1942 and 1943 the Huks had made attacks on Japanese shipments, garisons, and convoys and some disruption of the enemy supply line to Manila from the north was achieved. They were most active in the year 1943 when other guerrilla units were inactive in accordance with orders from General Headquarters, Southwest Pacific Area.

The Huks had a fighting strength of at least 5,000 men, 10,000 lightly armed reserves, and about 35,000 unarmed reserves. Most of their original arms were obtained from Bataan or captured from the Japanese. By February 1945, when

Manila was liberated, the Huks had killed about 25,000 Japanese spies and collaborators. It had fought over 1,200 engagements with the enemy and puppet constabulary. During the liberation campaign in Luzon the Huks helped the American

operations and contributed in no small degree to the final defeat of the Japanese. At the end of the war little interest was shown by the United States Army in recognizing Huk units and the peasants themselves lost interest when they saw the opportunistic groups and even collaborationist elements being recognized and rewarded with back pay by the United States Army. The nonrecognition of the Huk fighting forces and the later hostility of Army authorities toward the Huk organization, because of the Marxist tendencies of its leaders, caused bitter resentment among the Huks.

The United States Army Counter Intelligence Corps arrested Taruc and Casto Alejandrino on charges of murder and sedition and kept them in jail for over 7 months at the end of World War II. Casto Alejandrino is a fanatical, able, energetic, and brutal Communist and the son of one of the largest and most oppressive landowners on Luzon. Alejandrino was released first and turned over to the Philippine Commonwealth authorities for prosecution. No case was found against him and his release was ordered. With Alejandrino released the Army authorities then released Taruc. Both men capitalized on their arrest and the failure of their men to receive back pay; they immediately resumed command of the Huks and continued to carry on their political and economic movements which now were directed toward the landlords, the constabulary, and the Philippine Army. What

then did the Huk want? Their goals included the elimination of collaborators from positions of power and the broadening of democracy in the Philippines by the increased participation of the workers in the government. They wanted to be independent and not enslaved peons. They wanted to own the land that they tilled and the crops they harvested. The root of unrest in the Philippines was and is the fact that the autocracy of the Philippines imposed its own solution to the problems of another class, the peasants. To understand this it is necessary to examine the status of the peasant. The late Manuel Quezon said in 1938 of the Filipino worker:

*As he works from sunrise to sundown, his employer gets richer while he remains poor. He has to drink the same polluted water his ancestors drank for ages. Malaria, dysentery, and tuberculosis still threaten him and his family at every turn. His children cannot go to school, or if they do, they cannot finish the whole primary instruction.*

As late as 1940 the majority of Filipinos lived under an agricultural system based on feudal practices. Millions of peasants were still bound to the soil in a state no better than peonage with the average daily wage of the agricultural worker being 22 cents. The census showed that 1.3 percent of the population owned the large farms with an area of 20 hectares (about 50 acres) or more. The landlords collect from 20 to 22 percent a year on their investment. In the Philippines even today 1.5 million farm families are below the subsistence level—small wonder that there is serious agrarian discontent in the provinces.

#### Little Accomplished

President Quezon, a landlord in his own right, sought remedial legislation but little was accomplished because he failed to recognize that the farmer could not make a decent living under a 50-50 crop

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division. President Osmena tried to meet this problem after the liberation. In September 1945 he named a cabinet committee which brought together the landlords and tenants and a 60-40 crop division was adopted. This was a good beginning for a program of progressively increasing the tenant's share to enable him to live decently.

The Quezon administration did find one practical solution to the tenancy problem which was the purchase by the Government of the large estates and their resale to the tenants on the installment plan. They also undertook the program of land resettlement projects in Mindanao, the most successful of which was the Koronadal Valley Project. The Government "transplanted" about 2,000 peasants and their families to Koronadal in 1951 and the settlers transformed the valley into a self-sufficient agricultural colony. The Economic Development Corps opened 2,960 hectares (about 75,000 acres) in Kapatagan, Lanao, in February 1951 and of 89 families that have resettled there, 55 are Huk families. The land projects opened by the Armed Forces of the Philippines at Kapatagan, Lanao, have succeeded in bringing about some of the needed reform. But Kapatagan will become an idle dream unless the Government follows through with proper legislative action to expand land ownership.

In 1949 the Huk name was changed to *Hukbo Ng Mapagpalaya Sa Bayan*, the HMB or People's Liberation Army. The HMB campaign scored successes following the 1949 balloting. Taking advantage of the low morale of the people, it launched a series of determined attacks against the Government, raiding weakly defended towns, kidnapping authorities, and placing organizers in captured territory for espionage, kidnapping, and recruiting activities. The HMB bands swept through central Luzon villages seizing arms and supplies.

The situation grew worse to the point where conditions in the Philippines were considered gravely critical. Although the HMB was apparently not strong enough in force to undertake the overthrow of the Government directly, it possessed the capabilities to command any given situation by its hit-and-run tactics.

By 1950 the HMB numbered at least 20,000 and roamed at will over much of Luzon. They were well armed and under the control command of an astute Politburo operating from Manila. By April 1950 the Huks had spread from central Luzon to other provinces providing a serious threat to the very existence of the state. In some places they levied taxes, ran their schools and newspapers, and maintained a group of production centers.

### Ramon Magsaysay

But the press was still free and critical, the inaudible masses were eager for better conditions, and there were still a few incorruptible politicians. Among them was Ramon Magsaysay.

He had studied engineering at the University of the Philippines. Later he took a job as a mechanic with a bus company and advanced to become its general manager. At the time the war broke out he went to work for the United States Army and ended the war as commander of a guerrilla army of 10,000. In 1950, as Chairman of the House National Defense Committee, he attacked his own party, the Liberals, demanding a real fight against the HMB.

His actions caught the eyes of Manila's newspapers who supported him. President Quirino was diplomatically persuaded that a cleanup of the army and constabulary was overdue, and that Congressman Magsaysay was just the man for it.

Magsaysay got the job. A reorganization of the entire Armed Forces was begun in September 1950 to create a more effective combat force to meet the critical situ-

ation. He took to his role as a man of action. He combed the army for corrupt officers, promoted good officers, and put a revitalized force into the field, with one mission, "kill Huks." The Philippine Constabulary (which was held in distrust by the people because of the abuses it had committed) was reduced in strength and its troops were absorbed in the new Armed Forces. The army expanded from 10 battalion combat teams to 21 with a total strength of 22,500 officers and men.

To the demoralized population in HMB country, Magsaysay sent civil officers to explain the new army and to solicit their support. He posted rewards for Huks, dead or alive, and saw to it that they were paid. He went after the Huks with their own tricks. They picked at army communications with phony messages and fake letters; Magsaysay disrupted their communications even more with the same tactics and with sharp, well-planned forays.

But most important of all he struck at the source of the HMB strength, the social conditions that make them what they are. He sent out word that all who surrendered would be spared, and offered each Huk 10 hectares (about 25 acres) and a Government-built house in a liberal resettlement program in the fertile underpopulated island of Mindanao. "They are fighting the Government because they want a house and land of their own," said Magsaysay. "All right, they can stop fighting, because I will give it to them." The Huks began to come in, at first a trickle, then by the hundreds.

The HMB is still a force to be reckoned

with, although large areas of the country have been pacified. They are no longer a threat to Manila, or along the main highways through central Luzon. A number of the powerful leaders have been rounded up or killed. Magsaysay paid over 8,000 pesos to an informer who notified him of the Manila hideout of the Communist Politburo for the islands. The mass arrest of 105 members of the Politburo (including 5 members of the Secretariat) was made and the HMB underground in Manila was virtually wiped out. At least two HMB regional commands have been disbanded. A total of 70,000 pesos was paid for the roundup of 18 HMB commanders on the island of Panay. With their capture the HMB movement on Panay collapsed. When Magsaysay took over the Huks numbered an estimated 16,000. Now there are less than 8,000. Luis Taruc, the dyed-in-the-red general of the rebellion with a 100,000 pesos price on his head, became so distrustful of his own comrades that he would let only his family approach him. Taruc surrendered in May 1954 and was tried and sentenced to 12 years' imprisonment. A price of 130,000 pesos was offered for the capture of Jesus Lava, the Communist leader.

The remaining tasks for the Philippines still loom formidable and difficult. In the military sphere the army must destroy the hard core of the HMB movement—Lava and Alejandrino—to render the dissidents impotent. In the socioeconomic field additional reforms are needed to further eliminate the inequalities, poverty, misery, and injustices from which the dissident movement sprang to life and on which it continues to grow.

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Authors submitting materials to the MILITARY REVIEW are requested to forward manuscripts through the Security Review Branch, Office of Public Information, Office Secretary of Defense, The Pentagon, Washington 25, D. C.



# WHY WE FIGHT

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**W**HETHER we like it or not, war is an instrument that of necessity is frequently used to set the stage for either a positive or a negative policy. But freedom of action to elect to use war effectively is by no means produced automatically along with the idea of doing so. On the contrary such freedom of action must be carefully prepared and positively nurtured, lest it slip away perhaps almost unnoticed. Once gone, it may be beyond recovery. Should we fail to foresee and control events so as to preserve our freedom of action, then the initiative for effective use of war passes to our opponent.

This is how Czechoslovakia went in 1948 for a second time. Unable to face her enemies alone and also unable to persuade adequate Western power to come to her assistance, there was no chance for her to elect war as a solution. So Czechoslovakia slipped behind the Iron Curtain, as had other small nations before her.

In postwar China, for further example, there developed a civil war. Nationalist China did not possess the capability to oppose her enemy and was unable to secure adequate assistance from outside

sources. The result was inevitable—the Nationalists lost control of events. Such warmaking as was possible under the circumstances proved ineffective. As a result, today the free world shares the resulting Taiwan problem.

Circumstance is the casting director on the stage of war—circumstance of both adversaries with regard to capability, geography, and relative position. Strategy does not come in packages that can be used willy-nilly with complete disregard for the situation. No minor part of the situation of war is the military task that must be accomplished. In each instance the military task determines in large measure the tools we need to use, for weapons are the servants of strategy. Sound strategy is not to be geared to a particular weapon, picking as its objective targets suitable to its use. To do so is to force the solution down a grooved channel and, even worse, to obscure just what it is we seek by our military effort.

Some nations, of which we are one, prefer to use armed might only when compelled to do so by imminent peril. In that circumstance the use of war may well be limited initially to the negative objective of standing off subjugation. But there are other nations which obviously intend to use armed force in positive aggressive action to attain their national political objectives when they deem it necessary and consider themselves adequately

***Military action is solely for the purpose of attaining or maintaining the national political objectives. In our case this action is resorted to only when other means have proved inadequate. This is why we fight***

prepared. Their political objectives are carefully selected with the view that their attainment will give substance to the national policies which they are designed to support.

Although the Soviets have not used armed might except as a visible threat, this must not becloud the fact that with conveniently pugnacious North Koreans and Chinese to help, they have not needed to use their armed force openly. In Greece, where subversion allied to their cause was proved inadequate, the Soviets chose not to use armed might under the circumstance prevailing at that time and place.

### National Political Objective

One way to define a "national political objective" is the expression of the goal to be accomplished to give substance to our domestic or foreign policy. A goal, or one of several goals, is selected by the highest national political authority and its accomplishment is considered suitable and necessary to carry out the policy in question. Hence the term national political objective is not concerned with the kind of action to be taken to attain it, but rather with the nature of the attainment desired of itself and particularly its origin at the highest governmental level.

The part played by the national political objective is of vital importance in international affairs. Here we may drop consideration of domestic policy as not germane to our subject except when it

produces a foreign reaction and when, insofar as the foreigner is concerned, it is indistinguishable from our foreign policy. Facing the obstacles of practicable foreign reaction, our national political objective is only to be gained by the decision of appropriate foreign political authority or by their replacement with the political authority of our own armed force in position of appropriate control of the situation.

There is one main advantage that accrues to the aggressor. He has positive national political objectives sufficiently acquisitive to give clear definition to his military, diplomatic, economic warfare, and psychological warfare efforts. If these four national efforts are to be directed with optimum effect in the conflict of ideas and interests that is war, there must be intimate interlocking and integration of the whole. This must start at the top for without it there is no unity of effort. Not to have unity of effort produces waste where there may already be no margin to afford waste.

War is a conflict by no means confined to military operations. If it were so confined, we should not have had to coin confusing terms like cold war, total war, or political warfare—to name a few that are debilitating to a proper and wholesome public understanding. There is only one conflict, one war; and although there may be several fronts, all are attuned to their allotted role in the unfolding of a single master strategic plan.

### Must Define Objectives

We must define our national political objectives from the very beginning. They should always be chosen with the certainty that their accomplishment will give a definite effect to the specific national policy which each is designed to support.

Once we elect to gain our ends by force, the ultimate accomplishment of all the military effort and the entire war effort

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is to set the stage for our political authority to attain or pursue its political objectives—the national political objectives for which we went to war. The stage is to be set only by one of two possible occurrences: enemy political authority—who may not be the same individuals as were originally involved—has acquiesced in sufficient of our desires to suit us; or, enemy political authority has been replaced by the authority of our armed force in the entire area at stake and further threat to that area is beyond enemy capabilities.

So in any international conflict of ideas or aspirations, it is well to remember that there is an "appropriate enemy authority" who must be made to decide as we wish, or be supplanted in their control of events if the stage is ever to be set to give the effect desired. This desired effect is that our political authority has freedom of action to gain or to pursue those of its national political objectives which have been opposed by the enemy.

This is the basic task that realistically cannot be avoided. If the basic task is avoided or evaded through ignoring it or just plain ignorance, the good Lord just will not alter the international facts of life—nor will any policy pronouncement or official definition alter them.

We may remain completely without aggressive intent, whether induced by nature, by prudence, or by lack of interest. Nevertheless, we must give constant heed to the growing capabilities of other nations for external action through armed might. This is necessary so that the threat of force may be met in time by counterforce and at the most appropriately useful place.

One of the perils to clear thinking is the acceptance of "peace" as an unqualified policy. Peace is not disturbed by submission to the threat of force but is disturbed by meeting force with counterforce. The reality of our plans and preparations for the events which then transpire determines whether or not our previous politi-

cal objectives become lost in the immediately pressing requirements of just plain "survival."

In the process of desperately attempting to survive and seeking to regain the military initiative, we may allow the pressure of more immediate military objectives to obscure the fact that all our military action is to place our political authority in control of the situation so that our political objectives may be attained.

So it has been since the days of Cain and Abel, whether the conflict be one of ideas or aspirations between human beings representing their personal individual interests, or between particular men labeled "appropriate enemy authority," who have, until we persuade or dispossess them, the sole power to make the decisions we want made.

### Matter of Determination

There is mixed up in all of this a matter of determination. We *must* overcome the determination of the enemy political authority with regard to those of its national political objectives which we oppose. We *must not* let the enemy overcome the determination with regard to those of our national political objectives which the enemy opposes. Such is the fundamental nature of the basic task that realistically cannot be avoided.

In the comparatively simple world of Cain and Abel the latter's determination died with him. But as the world scene expands across international boundaries, this matter of determination becomes far more complex. The questions of whose determination counts, and what extent of military, diplomatic, psychological, and economic disaster will overcome it become paramount. That which reasonably can be expected to overcome the determination of one enemy might very well not be enough to overcome that of another. The variety of circumstance is infinite.

### Aggressive Military Policy

No matter how negative an initial policy of nonaggressive nature may be, and regardless of whether the nonaggressive intent remains throughout, it must change to an aggressive military policy from the moment the military challenge is made and accepted. Aggressor nations want what some other nations will fight to keep them from getting when there is a chance for the successful outcome of their resistance, and when freedom is at stake, even without clear vision of such a chance.

If there is no resistance, there is no war—just “peace.” But is that the kind of “peace” we want? Certainly not! We want “peace” on our terms, a vastly different thing.

The preparations to retain our freedom of action to make the choice of a sudden shift from a negative defensive national policy to one that is positive and aggressive calls for careful selection of an ultimate military objective that is suitable and adequate to accomplish the basic task that realistically cannot be avoided. The object of that task is invariably to influence the mind of the enemy authority who alone can make the decisions we desire.

Our ultimate military objective to be suitable and adequate must be directly related to the degree of enemy determination that is to be overcome in the setting of the stage. For example, when the political objective involves taking permanent possession of a tangible piece of real estate or giving it back to its rightful owner, what the military must accomplish is plainly evident. When we fight for such abstract objectives as “peace,” “democracy,” or “the four freedoms,” it may require unconditional enemy surrender before our political authority can even begin to go after them.

Thus the more abstractly our basic political objectives are expressed, the less will the wording of our ultimate military

objectives resemble them. In fact the latter may appear to the nonmilitary man as being far in excess of our political aim. However, that apparent excess does not alter the soundness of the military concept as to what is necessary.

It is well that such appraisal of the consequences as to cost be made before the event of war. After the war starts no amount of reappraisal showing that the effort is not worthwhile can bring dead men back to life. The effect of such reappraisal may even produce the negative prestige of having started something one cannot finish. That kind of negative prestige may embolden an aggressor to try again the device of war—it is a debit entry in the ledger of preventing war.

### Appropriate Control

In the showdown of military conflict, those who have planned for their own full freedom of action by aiming to create for themselves “appropriate control of the situation” may see their political objectives made possible to attain before their planned military action runs to full conclusion. Soundly planned and executed military action may impress enemy authority with the facts of his own deteriorating situation and induce him to make the best of a bad situation before it is too late.

Thus appropriate control of the situation means that it must be appropriate to the political objectives. By depriving the opposing political authority of freedom of action through placing ourselves in appropriate control of the situation, we do not necessarily mean unconditional surrender even though our actions may have pointed that way initially. There are circumstances and geography implied in the term “appropriate control.” After one has attained such “appropriate control,” he can afford to reduce his aims or to limit still further his ultimate military objective. This is quite a different thing from limiting his military action such as was done in Korea.

It is also quite possible to talk oneself prematurely out of a considerable measure of freedom of action. This is especially true when military developments have gone beyond initial calculations and improvisation of military objectives has become the order of the day.

### Conclusions

The national political objectives are more than slogans to unite our people. They are in fact essential common guidance. They are effective simultaneously in all activities of the Government directed toward their attainment. Diplomacy, eco-

nomie warfare, psychological warfare, and military action each plays its part as allotted in the national strategic plan. Thus our national political and military commander in chief, the President, from whom the national political objectives acquire their national political authority, is served with unity of effort throughout the Government.

The basic principle underlying military action is solely for the purpose of attaining or maintaining the national political objectives; and in our case that usually is because other means have proved inadequate to do so. It is for that we fight.

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Remuneration for all published articles submitted by military writers (active-duty personnel of the uniformed services of the United States Armed Forces and students of Allied countries while attending the Command and General Staff College) in the magazine is on a competitive basis.

**Monthly Award**—All articles written by military authors published in each issue are reviewed by a board of officers representing the Command and General Staff College. The board selects the first and second best articles published each month. The authors of the selected articles receive \$100 and \$50, respectively.

**Annual Award**—When 12 monthly awards have been made, the 12 first place articles are reviewed by the Faculty Board and the Annual Award article selected. The author of the Annual Award article receives \$350.

The selection of both monthly and annual awards is based upon the soundness, readability, completeness, reader appeal, accuracy, substance, originality of thought, authoritativeness, and the over-all merit and quality of the article.

### Civilian Writers

Reimbursement for published articles submitted to the **MILITARY REVIEW** by civilian authors (to include retired military personnel, and reserve personnel not on active duty) is on an individual basis.

# Infantry Emphasis--Where?

First Lieutenant Clinton E. Granger, Jr., *Infantry*  
G3 Section, 1st Armored Division, Fort Hood, Texas

*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**E**XPONENTS of specialized types of infantry have aggressively expounded the virtues of one type of infantry or another in recent months. However, comparative analysis of the types now in existence has usually failed to be considered in most of these discussions. The basic question always returns: What type of infantry best meets the needs of present warfare or of future warfare as we visualize it? What type units are needed with what type of equipment? *Where should the emphasis be placed?*

Under the present system of Army organization, all military units and personnel are subdivided by arm and service, in addition to the fundamental separation afforded by organization into units. In the infantry, personnel and units are further subdivided into units by type: airborne infantry, armored infantry, and conventional infantry—in the sense of normal foot soldiers. Each of the three basic types of infantry was developed to meet a need for certain characteristics upon the battlefield.

## Types

Infantry, without any specialization, has long been effective because of that very lack of specialization. With minor modifications the same unit could be engaged in an amphibious assault on the coast of Normandy, climb the Owen Stanley

Mountains of New Guinea, or be airlifted in Air Force transports to any corner of the globe. The absence of large amounts of technical equipment, such as are found in armored infantry units, simplifies the problems of rapid organization and training of such units and reduces the time required before new units can become an effective part of our forces.

Airborne infantry was developed to provide 3-dimensional maneuver through the use of vertical envelopment. As such, it was quite successful and the value of transporting infantry troops through the air in sufficient quantity to effect a decision was soon recognized. Armored infantry, too, was organized and equipped for a more specific mission because the need for infantry with armored units was seen, and conventional infantry was found to be incapable of keeping pace with tank elements. All three types have distinct advantages under a certain set of circumstances, yet each has definite disadvantages under another set of conditions.

## Factors

The factors affecting the determination of desirable types of units are as diversified as the missions which these units may be called upon to perform. Because the utilization of the most desirable types of units will depend greatly on the tactics to be employed, the first factor to be considered must be weapons. Military history indicates that the evolution of tactics mainly has been the result of the evolution of weapons employed to execute the mission. The weapons of today are greatly advanced over those of the past. The most



discussed modification is in the tactical use of nuclear weapons. This weapon has been demonstrated in several impressive tests and the methods of delivery have been determined and made available to commanders. However, the effect which the use of atomic weapons will probably have upon tactics and techniques of the infantry and on the infantryman, is still problematical.

While use of nuclear weapons on the battlefield is possible today, the number and method of employment is another matter indeed. Our forces must be prepared to counter either nuclear or conventional weapons and accomplish the assigned mission. At the same time, we cannot afford to become defensive minded; we cannot hide behind our shield of the atom bomb, as the French did behind the Maginot Line which was bypassed in a matter of days because of the lack of ground forces properly trained, equipped, and disposed to defend it. Our forces, especially our infantry, must be prepared not only to carry out defensive missions but to enter into the attack to seek out and destroy the enemy on terrain of our own choosing and under circumstances which are desirable to us in order to successfully terminate a full-scale war.

The tactical use of atomic weapons has, in some cases, overshadowed other current developments worthy of consideration. The basic weapon in the hands of the individual soldier, the rifle, has been in a tran-

### Principles

Lieutenant General James M. Gavin included the following statements in a recent article:

*The battle zone must be as deep as the enemy can travel with the fuel tanks of his armor full and rolling immediately after the atomic blast.*

*We are trying to discard old concepts of linear control of the battlefield for one of area control—a problem of controlled dispersion.*

*Peace can be kept by using our technology to get our forces precisely where we want them.*

Consideration of desirable, available weapons keeping in mind the current general types of infantry, and the aims noted by General Gavin, are best evaluated in the light of the principles of war as stated in Field Manual 100-5, *Field Service Regulations, Operations*.

The principle of the objective.—“Every military operation must be directed toward a decisive, obtainable objective.” Here the goal is clear for if the issues of the world should be thrown upon the battlefield for decision, then the commitment of troops in open warfare would be for the purpose of destroying the enemy's ability to wage war and, even more specifically for the infantry, to close with and destroy the enemy forces on the ground. To achieve this objective our infantry must be properly organized and suitably equipped.

***The basic question always returns: What type of infantry units and what type of equipment is needed to achieve the demands for both strategic and tactical mobility. Where should the emphasis be placed?***

sitional stage for a long time. New recoilless rifles, mortars, and armored vehicles will require modifications in concepts. Methods of transportation have changed the capabilities of infantry units, both large and small, and require re-evaluation on the part of commanders at all levels.

The principle of the offensive.—“Only offensive action achieves decisive results.” Our thinking must be toward the final goal and the achievement of that goal through offensive action. With the thought in mind that *mobile infantry is offensive infantry*, we determine a very important

characteristic and one which is necessary to the success of any campaign.

The principle of mass.—“Maximum available combat power must be applied at the point of decision.” Again, the vital characteristic of mobility is emphasized for in order to mass rapidly from dispersed formations the unit must possess great mobility. This is one of the major differences between the three basic types of infantry—mobility on the ground.

The principle of economy of force.—“Minimum essential means must be employed at points other than that of decision.” This is a corollary to the principle of mass in that one is dependent on the other and both are dependent upon mobility.

The principle of maneuver.—“Maneuver must be used to alter the relative combat power of military forces.” The value of maneuver, at all levels of command, needs no amplification. The ability of a unit to maneuver, however, will depend on the organization and equipment, again, in relation to mobility. Maneuver of a squad within a platoon may be accomplished by any of the three major types of infantry in a similar manner but, where distances increase, the abilities of the larger units to maneuver will vary considerably with the available transportation.

The principle of surprise.—“Surprise may decisively shift the balance of combat power in favor of the commander who achieves it.” Surprise may be obtained by feints, unusual timing, doing the unexpected, or by making it impossible for the

enemy to predict your actions accurately by rapid movement of your forces.

The principle of security.—“Security is essential to the application of the other principles of war.” Security, like surprise, may be related to mobility and hence to the initial question: Which unit is best equipped to carry out the type of missions which might be assigned?

### Mobility Defined

Relative to the question of “which type of infantry” the principles of war emphasize the *most important single factor* of mobility. By “mobility” do we refer to “strategic mobility” or to the ability to shift units moderate distances on the battlefield? This need not become a point of dissension, as both types of mobility are required, and it would be well if our future planning considered both possibilities.

If we are to cope with enemy attacks initially, we must possess strategic mobility and we must also possess tactical mobility once battle is joined.

Weapons, with special reference to nuclear weapons, are certainly an important factor but there are other considerations which must be faced at the same time. The use of airborne troops implies the ability of the Air Force to at least partially isolate the battlefield and maintain air supremacy, especially during the delivery and initial resupply phase of an airborne operation.

Logistical support is an immediate consideration. True mobility is not a function of combat units alone for supporting units must also be able to keep pace or such essentials as ammunition, fuel, and food will soon be in short supply; hence planning must include infantry supporting elements as well as combat elements.

### Basic Differences

The basic differences in the three types of infantry lie in the method of delivery to the battlefield, and in the organic equipment available to move from one portion

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of the battlefield to another. Infantry is faced with two problems: becoming mobile as part of strategic forces; and retaining tactical mobility on the battlefield.

Conventional, or "straight leg," infantry with limited organic transportation depends upon other units for additional vehicles or modes of transportation, but being capable of limited movement on foot it does possess certain qualifications and lacks others. It is capable of being air transported by troop carrier aircraft or by helicopter but it does not possess the organic means of transportation. It does possess strategic mobility, limited only by the range of available aircraft, and by the possession of an airhead, if fixed-wing aircraft are to be employed. While this appears to meet the first requirement, this mobility is dependent on the Air Force's ability to control the air through which the aircraft must pass. Using helicopters, tactical mobility is primarily limited to daylight operations at the present time, since movements at night are extremely difficult when using rotary-wing aircraft. Mobility on the ground can be obtained by using vehicles not organic to units, but here the normal limitations based on available truck companies would be quickly disclosed and probably only a portion of such a force would be capable of movement at one time.

Airborne infantry has long been vaunted, and rightly so, for the advantages of the vertical envelopment. A striking example of initial complete mobility is the mass delivery of full units without advance preparation of airheads or beachheads, but once delivered they lack sufficient organic transportation to continue in the mobile role. However, the advantages listed under "straight leg" infantry apply to airborne troops for they certainly can be employed in roles other than airborne (witness Bastogne); they possess all the advantages of conventional infantry and, in addition, may establish airheads, where

required, or carry out specialized missions involving vertical envelopment.

Too often forgotten by their own branch and considered tankers rather than infantrymen, armored infantry lacks the strategic mobility endowed by air transportability because of the weight and bulk of the vehicles which are, in turn, the greatest asset in mobility and armored protection on the battlefield. The present armored personnel carriers, both the *M75* and the later *M59*, weigh 21 tons; while this load may be carried by existing aircraft, the problem of transporting such heavy equipment in large quantities by air has yet to be solved. Once delivered to the vicinity of the area where the decision of the battle is to be reached, armored infantry possesses the greatest advantages in comparison to conventional and airborne infantry. With full fuel tanks the armored personnel carriers may travel almost a hundred miles with full tables of organization and equipment before resupply is required and the battalion trains can perform that resupply without assistance from other units in the initial stages of any operation. Armored infantry has the further advantage of being able to keep pace with rapidly moving tank elements and provides a great degree of protection to the individual soldier during movement.

When the factors are properly balanced and capabilities and limitations compared with the desired traits, it would appear that emphasis on any one of the present three general types as we know them now would leave certain, very necessary qualities out of the infantry capabilities. No one type is the solution, but a combination of all three, with perhaps the addition of a fourth, used in the proper proportion at the proper place and time can accomplish any desired mission.

Therefore, considering only the three existing types of infantry, we are faced with no clear-cut solution. One type of infantry, conventional, requires little spe-

cial training and has strategic mobility with the assistance of the Air Force; the second type, airborne, has strategic mobility but loses tactical mobility on delivery to the drop zone; and the third type, armored infantry, while highly desirable because of organic vehicles, cannot be air transported in sufficient quantity into a potential danger area because of the weight and bulk of the equipment.

### A Solution?

What then is the solution? First, cease attempts to oversimplify the problem. The three existing types considered individually do not represent a solution; employed together with each in the role for which it is best trained and equipped, they can provide all of the desired characteristics.

Second, consider the traits which have been determined to be highly desirable, and tailor a fourth type of infantry to meet the general need, not to replace all other types but to supplement the existing type units. We have found that both strategic and tactical mobility are the main desired traits. This means that the units must be capable of being airlifted and at the same time must possess adequate organic transportation to retain tactical mobility on the battlefield. An infantry unit, which might be termed "mechanized infantry," that is equipped with lightly armored, cross-country, fast-moving vehicles

would possess most of the advantages of the present armored infantry on the battlefield and with proper design could be airlifted to the decisive point.

Perhaps the helicopter is the vehicle, rather than a land-bound type, or to daydream a little, perhaps a vehicle delivered by a helicopter or assault transport with a detachable pod will provide the answer. While we wait for the capabilities of tactical airlifts to increase, however, it would be wise to start planning and experimenting with a mechanized infantry unit, to provide trained troops now, and to provide a nucleus for whatever type unit the development of carriers for infantry may dictate.

The time of thinking is past—the time of action is here. The enemy possesses the atom bomb, a greater number of foot troops, and greater numbers of some critical types of equipment. Therefore, our success must rest not on industrial potential, or on superior manpower, but on superior tactics and strategy; the key to this is greater mobility in the ground combat arms.

The mission of the infantry remains the same. Organizations may differ, tactics and techniques may vary with weapons and machines, but the infantry must retain the ability to perform the primary mission—close with and destroy the enemy.

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In a world filled with tensions, when an attack on free people could take the form of an unannounced aggression at a time and place of the potential enemy's own choosing, our Army must be prepared to take to the field and retaliate on short notice.

The technological advances which have been made in the development of new and more destructive instruments of war have in no way diminished the decisive role of the ground soldier in winning battles and wars. New weapons have placed greater demands upon his skill, tenacity, and will to win. It is the ground team—Infantry, Armor, and Artillery—supported by the services, and in conjunction with the Navy and Air Force, that must seek out the enemy, kill or capture him, destroy his will to fight, and wrest ground from him.

*General John E. Dahlquist*

# MILITARY NOTES

## AROUND THE WORLD

### UNITED STATES

#### **Military Jet Trainer**

The development of a new tandem-seat 2-place jet trainer, designed and built to military specifications but privately financed and ready to be delivered as



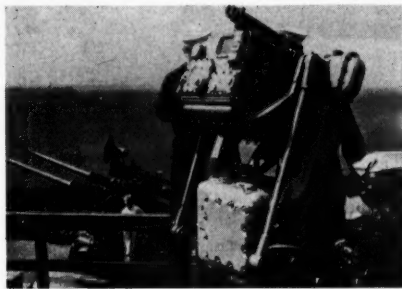
New jet trainer for Western Nations ready.

an "off-the-shelf" airplane for military services throughout the free world, was announced recently. The purpose for which this *Model 73* jet trainer was designed is to train pilots in the operation of turbo-jet aircraft. This training includes aerobatics, confidence maneuvers, night flying, basic instrument training, and all necessary dual instruction. The new model is based on the *T-34* and uses many of the same components. It flies and handles like the *T-34* and could be used for training students from the beginning without using

any other plane for previous training. The two planes are so similar that very little transition training would be required for a student to move up to the jet class from the *T-34* into the new *Model 73*. It is estimated that the new trainer will have a high speed in level flight of 253 knots at 15,000 feet, a stall speed of 60 knots, and a gross weight of only 4,521 pounds. —News release.

#### **Gunfire Control System**

The *Mark 63* gunfire control system gives antiaircraft batteries improved accuracy at both low and medium altitudes where



New gun control system aids coast watch.

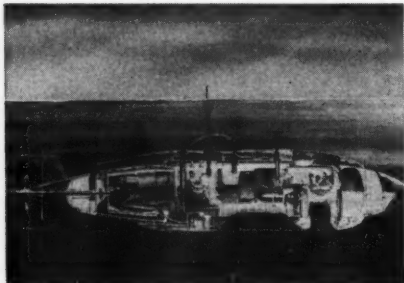
modern sonic speeds are most difficult to follow. This system supplies an automatically computed lead angle for the 3-inch



and 5-inch guns in any type of weather. Jet capability of the *Mark 63* system results from combining newer gunfire controls and radars with the gyrooptical tracking principles of World War II gun-sights. Radar ranging and high-speed computation are among the other advances included in the new system.—News release.

### **Midget Submarine**

The midget submarine, *X-1*, recently developed for the Navy embodies the latest features for maximum efficiency, comfort, and safety of its 4-man crew. The major features are an airplane like dual control system which permits 1-man operation; air conditioning and temperature



**Midget submarine has many added features.**

control; separation of powerplant from cabin and latest insulation technique to minimize noise level for crew comfort; easy standing room; bunks, reading table, and dime-size walkway for crew comfort during cruising; adequate water and food storage and hot plate for preparing warm meals; and soft or easy-on-the-eye illumination and decoration. Other design features include provisions for dock or shipboard assembly of components and replacement of parts. The submarine is so small that it can be transported by train or truck, and because of its disassembly features, major components can be transported by air. The principle use of the new submarine will be in the testing of harbor defenses.—News release.

### **Assign Aircraft**

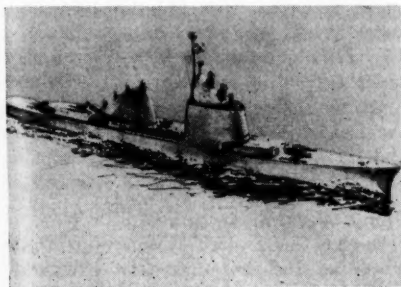
In response to a demand for a ready and versatile transportation medium to keep pace with the rapid expansion of anti-aircraft defenses across the Nation, Army pilots and light aircraft are being assigned to the Army Antiaircraft Command. The use of both fixed- and rotary-wing light aircraft has been authorized for each of the Army Antiaircraft Command's five regional commands. It was pointed out that experimental use of the light aircraft had proved them to be invaluable for many types of work. The development of *Nike* guided missiles as an anti-aircraft weapon contributed, to a considerable extent, to the demand for aviation sections in the command. Continued expansion of the around-the-clock anti-aircraft defenses has created the need for quick liaison and contact between commands and batteries in defense areas. In some cases a single battery may be split by natural geographical barriers or because of the city plan of the industrial or metropolitan district. There may be a mountain, a river, a large bay, or a series of factories separating defense units which must operate in close cooperation to achieve a synchronized effort. The *L-23*, a 6-passenger, twin-engine aircraft will be used by the regional command headquarters to transport commanders between the units and defense areas of their regions. Units in the Sixth Army area have experimented with helicopters and found them very satisfactory.—News release.

### **Nuclear-Powered Navy**

The Navy is going "full speed ahead" in its plan of converting warships from oil to atomic fuel according to recent reports. Among the newest of the new Navy, requested as a part of the 1957 construction program, is the *Salu* type nuclear-powered guided missile cruiser designed to be equally effective against sea, land, and undersea targets. This artist's con-



ception portrays the ship, subject to design changes, which will carry a number of multiple missile launchers for missiles of varying range and capabilities plus torpedo-launching equipment. Another new ship planned under the 1957 program is



Guided missile ship planned for new Navy.

the helicopter assault carrier (*LPH*) which will operate with amphibious task forces and is designed for landing assault troops by helicopter. Two other ships planned under this program are the frigate class guided missile ship (*DLG*) which is designed to destroy air targets and will have antisubmarine and airborne early warning capabilities, and the destroyer class guided missile ship (*DDG*) which has been designed to be equally efficient against air and undersea targets.—News release.

### Huge Cargo Plane

The huge new *C-133A* turboprop cargo plane, with twice the payload capacity of the largest military transports now in service, is expected to set new standards of performance as a global carrier of air cargo. The plane will undergo an exhaustive series of tests before it takes to the air for the first time this spring. The 4-engine, high-wing plane has a span of 179 feet 8 inches. Its fuselage is 148 feet 2 inches long, and 16 feet 2 inches in diameter. The tip of the tail towers more than 48 feet. If the *C-133A* were parked on a football field with the nose at the goal line, it would extend to a

point just 2 feet short of the 50-yard line and its wings would reach 10 feet over each sideline. The gross weight of the plane is 255,000 pounds. It is powered by four *T34-P-3* turboprop engines—jet turbines driving propellers—each rated at 6,000 horsepower at takeoff. They drive 3-blade, reversible turboelectric propellers 18 feet in diameter. This combination will make the new transport one of the fastest air freighters in production for the Air Force. A crew of four, consisting of pilot, copilot, navigator, and systems engineer, will handle the plane. Two loading doors provide access to the 90-foot long cabin floor, which is at truck-bed height. Virtually all military vehicles can be driven through the main door at the rear of the fuselage. Sample loads which can be driven or hauled aboard by means of an integral ramp are two prime movers weighing more than 40,000 pounds each, 16 loaded jeeps, 20 jet engines, or various combinations of vehicles, heavy ordnance, and general cargo. Although the plane is designed primarily for air freight, its basic configu-



Huge cargo plane is readied for testing.

ration can be modified easily to permit the transportation of more than 200 troops. It could also be used as a hospital plane to carry both litter and ambulatory patients. Self-contained equipment makes the plane independent of ground engine-starting devices in any climate. The cabin has been pressurized to permit high altitude operation.—News release.

### 'Fountain Pen Dosimeter'

A simple, rugged little detector that tells at a glance how much deadly gamma radiation the body has absorbed has been perfected for the Army and civil defense after exhaustive testing by the Signal Corps Engineering Laboratories. Resembling a stubby fountain pen, the device, de-



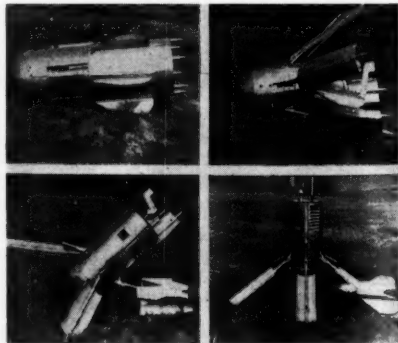
Fountain pen dosimeter to detect exposure.

scribed as the best personal dosimeter developed for Army troops, is ready for mass production. Known technically as *Radioometer IM-93*, the dosimeter records gamma radiation up to 600 roentgens. A medically recognizable dosage is about 25 roentgens, while over 100 will produce the first signs of radiation sickness, and usually 400 will kill 50 percent of those exposed. An easy-to-read scale reveals the total radiation the body has been exposed to over the time the dosimeter is carried, thus providing a constant check on "gamma fever." The new dosimeter is clipped in the pocket like a fountain pen and needs no delicate handling or special care. It also operates after immersion in water and at high altitudes and is unaffected for all practical purposes by arctic cold or desert heat. It can be stored indefinitely

before use, giving it a marked advantage over the commonly used photographic badge dosimeters which deteriorate after long storage or exposure to abnormal heat. In addition the instrument can be used over and over again for years with infrequent recharge. The fountain pen dosimeter weighs just under 2 ounces, is about 4.5 inches long, and  $\frac{1}{2}$  inch thick, and is easily carried in pocket or purse. To read it the user merely peers through a lens in one end, with a light source at the other and the amount of exposure is shown on a highly visible scale.—News release.

### Robot Weather Station

During the 4 years of Operation *Deep-freeze* in the Antarctic, the Navy will use this small robot weather station. Named "The Grasshopper" the device weighing only 200 pounds will be dropped from an airplane onto the polar icecap at



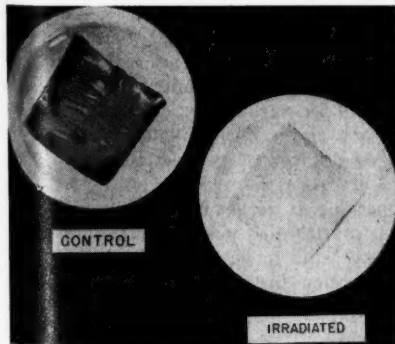
Navy's robot weather station in Antarctic.

a place of optimum value in providing meteorological information valuable to forecasting the weather. It was developed by the Bureau of Ships and the Naval Electronics Laboratory and operates on the following principle: dropped by parachute which detaches itself upon impact with the ground; erects itself at the point dropped through ingenious mechanical devices which also self-rights the station in the process; takes weather information

at predetermined intervals—surface wind speed, wind direction, temperature, barometric pressure, and humidity; and transcribes these observations automatically into international Morse code and transmits at a speed of 17 words per minute by radio. "The Grasshopper" operates from batteries which will power it for 60 days or until such time as members of the expedition arrive at the location. When personnel are at the station, it can be shut off, turned back on, arrangement of the schedule can be changed, batteries recharged, and a more flexible use made of the equipment.—News release.

### Rays Preserve Food

Intense gamma radiation is being used to preserve food by irradiation in tests conducted by the Army Chemical Corps under a project sponsored by the Quartermaster Food and Container Institute. Experiments are being conducted in the radiation of foods to find new and better preservation methods over refrigeration and heat which alter flavor, color, and texture. The food thus preserved can be kept for many months at room temperatures



Gamma radiation used as food preservative.

without refrigeration. The source of irradiation used in these tests is used fuel rods from nuclear power reactors. The effectiveness of radiation sterilization of food products is illustrated by the two packages

of cheese shown. The package on the right was irradiated on 15 May 1954. The two packages were then placed on a shelf and left at room temperature for 1 year. Both samples were wrapped in air tight packages to prevent airborne recontamination.—News release.

### Amphibious Assault Equipment

In a recent demonstration the Marines displayed some of their new amphibious assault equipment. This included an



Marines test amphibious assault equipment.

LVTP-5 amphibious armored personnel carrier, the *Ontos* which is a lightly armored antitank weapon mounting six 106-mm recoilless rifles and a 50-caliber machinegun, and an *HRS-3* helicopter. The plane is equipped with *ROR* (rocket on rotor) which is the dome like device shown in the center of the rotor blades. This acts as an auxiliary power unit for lifting heavier loads and as a safety factor in the event of forced landings. The Marine Corps is continually testing its helicopters for improved methods of transporting its men and equipment.—News release.

### **Electronic 'Brane'**

An electronic "brane," a device described as enabling a plane to hit its target with unprecedented reliability, has been added to the equipment of the Air Force's new *B-52 Stratofortress*. The air crew feeds such information as air speed, altitude, and desired target into the "brane," which is short for "bombing radar navigation equipment." After the information is fed to it, the device then guides the plane to its target and through its bombing run. The "brane" resembles, on a smaller scale, the giant computers now used in industry and research. Each unit will cost about 300,000 dollars and will occupy about 30 cubic feet of space. Each weighs 1,457 pounds and employs more than 300 electronic tubes. It was conceived by the Air Force's Air Research and Development Command.—News release.

### **Civilian Reserve**

A national defense civilian reserve for the training of up to 4,000 top flight executives from business and labor for Government service in any emergency has been created by the President. The Office of Defense Mobilization (ODM) has been ordered to get the training program underway on a full-scale basis. A pilot program has already been started. Participation in the reserve pool is on a voluntary basis and those who enroll must have permission from their employers. It was explained that enrollees would be called upon in any general mobilization for the most part to take jobs in the ODM or in the Departments of Defense, Commerce, Interior, and Labor. Enrollees are being drawn from the ranks of labor organizations as well as business. Government officials will go to key persons wanted and ask them to take part in the program with employer permission. Those who agree are asked to go to Washington or other centers for training. Those taking part would serve in one of three categories:

without pay; on a 15-dollar-a-day allowance; or on a regular Government salary at full time. As examples of the fields from which the Government seeks executives are communications such as newspaper, radio, and television officials and transportation leaders from airlines, railroads, and the motor vehicle industry.—News release.

### **Rocket-Firing 'Brain'**

The development of a rocket-firing electromechanical "brain" to direct from shipboard the destruction of ground troop concentrations ashore for the Navy Bureau of Ordnance has been announced. A key feature of the 2-computer combination is its ability to switch instantaneously among several types of rockets, selecting either high- or low-angle fire as required. Designated the *Mark 91-Mark 92*, the combination has been installed aboard the *Carronade*, the Navy's first Inshore Fire Support Ship (*IFS-1*). Each computer reportedly acts as a unit to perform the required navigational and ballistic calculations involved in the rocket-launching problem. The deck tilt section of the *Mark 91* automatically corrects for the effects of the ship's roll and pitch. The *Mark 92* computes and transmits rocket-launcher orders for various tactical situations. The device solves the ballistic problems for several types of rockets and four modes of fire after the selection by the computer operator. In rocket fire a larger volume of sustained fire is possible, therefore, rocket fire is said to be of inestimable value in saturation fire and at short ranges can be much more harmful to ground troop concentrations than shell fire.—News release.

### **Atomic Power Plan**

The task of designing and developing a nuclear reactor plant for the purpose of producing heat and electric power for isolated military bases has been assigned

by the Atomic Energy Commission. The objective is a simple, compact, and easily transportable steam turbine generator plant in which heat from uranium fission will generate steam.—News release.

## INDIA

### Record Order

Record orders for 81.9 million dollars worth of railroad engines and coaches have been placed by India with overseas countries it was officially announced. Japan and 10 European countries will supply 410 locomotives and 185,222 coaches for the first year of India's second 5-year plan, ending March 1957. Japan gets the highest order with West Germany second. Others in the order of their contracts are the United Kingdom, Italy, Belgium, Czechoslovakia, and France. Other orders also went to Poland, Austria, Switzerland, and Hungary.—News release.

## WEST GERMANY

### Arms Aid

The estimated billion-dollar arms aid program by the United States to the new West German Army was officially opened recently with the delivery of three huge trailer loads of equipment at the Andernach training camp. The first arms delivered included pistols, rifles, bazooka rocket launchers, light machineguns, and field signal equipment. Big equipment, such as tanks, guns, planes, and possibly some destroyers, will come later. Andernach is where a select group of German volunteers have started training. United States military personnel are stationed at Andernach to instruct the German recruits in the use of the equipment.—News release.

### Will Purchase Arms

In order to keep West German industry working at full capacity on civilian goods, the Government is preparing to order 600 million dollars worth of military equipment abroad. The purchase of armaments

abroad involves only the expenditure of foreign exchange and presents no financial or economic problem. This announcement evidently settles the question of whether the Government will ask industry to convert part of its production to armaments or use its very favorable balance of payments for purchases abroad. It is felt that if the industrial community had been forced to convert to armaments it would have lowered the standard of living of the people. Every effort is being made to keep armament from interfering with the normal development of civilian economy.—News release.

## YUGOSLAVIA

### Get Jets

An undisclosed number of *F-86 Sabre Jets* will be sent by the United States to Yugoslavia under the current military assistance program. The planes will be some of the 400 returned by the British Royal Air Force last July. The planes are being overhauled before they are turned over to the Yugoslav Air Force.—News release.

## ITALY

### Atomic Age Base

The first nuclear warfare airbase to be constructed in Western Europe has been occupied by the United States Air Force. The base, located at Aviano, Italy, is a widely dispersed installation and consists of seven separate areas spread over 1,300 acres. The Air Force believes that the base is as nearly "nuclear-proof" as any airbase can be without putting it underground. It is so spread out that it cannot be knocked out by a single tactical nuclear bombing raid according to the report. Aviano nestles in the northwest corner of Italy on a plain extending from the Italian Alps to the Adriatic and is said to have an ideal strategic location. Towering Alpine peaks surround the base on three sides. The base provides additional air cover for the crucial Brenner



Pass invasion route that spills into the Po valley and the Lombardy plain.—News release.

## COMMUNIST CHINA

### Get Atomic Reactor

The Soviet Union plans to set up a 6,500-kilowatt experimental atomic reactor in Communist China according to a recent report. The reactor will be used to train Chinese scientists and technicians.—News release.

### Develop Alphabet

In a nationwide campaign against illiteracy the Chinese Communists are planning to introduce a 30-letter version of the English alphabet to replace the centuries-old Chinese written language of 30,000 painted characters. China has about 20 main dialects and 200 less important ones but only one 3,500-year-old written tongue. This is understood by literate speakers of all dialects, but pronounced by each in a different way, and only scholars of great distinction know even half the characters. The new 30-character alphabet will use all the English letters except "V" and an additional 5 letters representing sounds common in Chinese. The pronunciation of some consonants and of vowels will be different from English practice. The letter "Y" will be used as a "sixth vowel" pronounced like the German "U" with an umlaut.—News release.

### Regime Safe

Communist China's present regime faces no threat of a popular uprising according to a report entitled, *Analysis of Communist China's Strength*, prepared by the Foreign Office of Japan. The book, a compilation of opinions of Japanese experts on China, says that the Communist regime receives very strong support from the people. Officials pointed out that the book is mere research findings that do not reflect any official view of the Foreign Office.

The book states that Communist China is an important power in Asia that can no longer be slighted and predicts that Japan will give strong emphasis to policy on China. It said that China's alliance with the Soviet Union was not without friction but these were not strong enough to cause an open break between the two countries. The report posed three major questions but offered no answers. These were: what would Communist China do if a contest were to arise with the Soviet Union over some fringe area; is there any chance of provoking a war with foreign powers if the regime keeps fostering nationalism; and do the people acclaim the Communist regime because it lifted their nationalistic pride or because they approve all Communist measures.—News release.

## GREAT BRITAIN

### Leave Japan

British Commonwealth forces in Japan will be withdrawn and those in Korea reduced to a battalion in the near future. There are now between 6,000 and 7,000 British troops in the two countries with most of them in Korea.—News release.

### Cut Ties

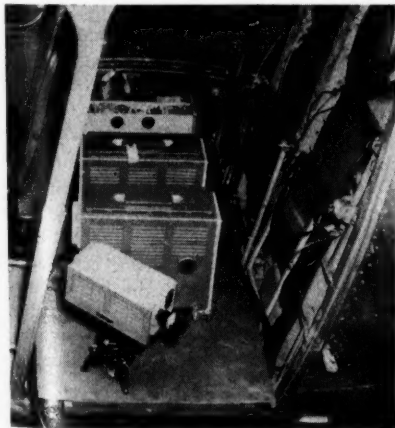
Agreement to proclaim the independence within the British Commonwealth of the Federation of Malaya by 31 August 1957 has been announced by British and Malayan negotiators. The decision to set free the nine Malay states and former Straits Settlements of Penang and Malacca does not affect the island of Singapore, a British crown colony at the tip of the Malay peninsula and Southeast Asia's biggest commercial center. Singapore is also pressing for freedom. The Malayan Federation produces half a billion dollars worth of tin and rubber annually. Great Britain has transferred control of the peninsula's internal defense and security to a Malayan minister but will continue



to direct the fight against the Communist guerrilla insurrection. The right to keep troops in Malaya during the 18 months before independence for "external defense" was retained by Great Britain. It was announced that after independence Malaya and Great Britain would conclude an agreement for defense requirements and mutual assistance in defense matters. This action appeared to provide for a British-Malayan defense alliance in which the British would undertake to help build up the army and arms of the new state.—News release.

### Traffic Cop

A demonstration of air-to-ground television was recently presented to Scotland Yard chiefs and top British Army officials. A television camera was mounted in the doorway of a helicopter and trans-

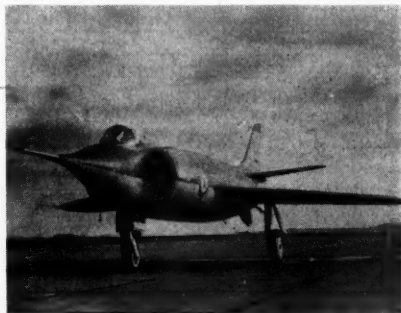


Television helps control traffic from air.

mitted pictures of highway traffic, docks, shipping, and harbor installations from heights between 500 and 1,000 feet. The camera, control unit, and transmitter are mounted on a stretcher in the helicopter for easier handling. The transmitting aerial is attached to the plane's tail skid.—News release.

### Swept-Wing Jet

A new British swept-wing jet, the *Supermarine N.113* which has been ordered in quantity by the Royal Navy, recently made its first flight. The fighter is a development of the *Supermarine 525* and is described as the fastest and most powerful aircraft ever designed for aircraft



Powerful carrier-based plane joins Navy.

carrier operations. It will have high-lift flaps incorporating "supercirculation," whereby air ducted from the engine compressor is blown over the upper surface of the flaps cutting down on deck-landing approach speed. It is powered by two Avon turbojet engines, and is fitted with a "tooth" wing leading edge and an all-moving tail.—News release.

### Air-To-Air Weapon

An air-to-air guided missile which may have a velocity of 2,000 miles an hour is soon to become the Royal Air Force's first weapon of this nature. The weapon, named *Fireflash*, will be carried as part of the armament of a piloted aircraft and will be propelled to supersonic speed by solid fuel rockets. The warhead is designed to explode as soon as the weapon is in range of its target. Great Britain had previously announced that its main effort in the development of guided weapons was being devoted to providing defense against bombers flying at high speeds

and at great altitude. *Fireflash* is apparently a defensive weapon of this type.—News release.

## USSR

### Resume Canal Project

Under the new 5-year plan work will be resumed on the North Crimean Canal project. The new project is less ambitious than the original undertaking announced in 1950 during Stalin's regime. The original project called for the construction of the North Crimean Canal in conjunction with a South Ukrainian Canal starting on the Dnepr River at Zaporozhe, however, no reference to the South Ukrainian Canal has appeared in recent years. As now planned the North Crimean Canal will run from Kakhovka on the Dnepr to the tip of the Kerch Peninsula in the eastern Crimea. It will follow the route of the present Krasnoznamensky Canal south to Kalanchak and then across the Perekop Isthmus into the Crimea.—News release.

### Return Base

The Porkkala naval base has been returned to Finland by the Soviet Union. Under the 1944 Soviet-Finnish Armistice and the 1947 Treaty of Paris, the base area was leased to the Soviets for 50 years. They have, however, decided to give the base back to the Finns now.—News release.

### Rare Metal Search

In an effort to discover and develop new rare metal and mineral resources a force of Soviet prospectors is at work in Soviet Central Asia. The drive is centered on Kazakhstan, the vast tract of country lying between the Soviet Union and China. Under the new 5-year plan prospectors will search for new deposits of lead, zinc, copper, molybdenum, and titanium, as well as iron and manganese ores. Numerous rich diamond fields and beds in the Yakut region of northeast Siberia will be fully developed.—News release.

### Amphibious Helicopter

The development of an amphibious helicopter which is designed to take off from—and land on—decks of ships, water, or land has been announced by Radio Moscow. Known as an "aerial motorcycle," the plane has a top speed of 75 miles an hour. It was pointed out that in the event of engine failure in the air the helicopter's self-rotating propellers act as a parachute enabling the aircraft to descend gently.—News release.

### Map Arctic Bed

The first relief map of the bed of the North Arctic Sea has been completed by the Leningrad Arctic Research Institute according to Tass. The map is based on recent explorations and the study of the Lomonossov underwater range, about 1,100 miles long. It was reported that two new underwater ranges had been discovered in the polar basin, south of Ellesmere Island, between 190 and 250 miles long.—News release.

## ECUADOR

### Complete Rail Line

After approximately 40 years of construction work through Ecuador's rugged mountain area, the country's Andes-to-the-coast railroad is nearing completion. The new 200-mile rail line, connecting Quito, the capital, with the northern seaport of San Lorenzo, will shorten by about 350 miles the distance between the production areas of northern Ecuador and the Panama Canal area. Formerly the major route to the Canal Zone for Ecuadorean exports has been by rail to the principal seaport town of Guayaquil in the south. The new line may provide the incentive to develop large additional areas of forest and farmland in this area. Increased production of bananas, rice, sugar, cotton, tobacco, cocoa, coffee, and balsa wood are anticipated from this fertile territory.—News release.

# FOREIGN MILITARY DIGESTS

## Transportation as a Strategic and Economic Problem of the Soviet Union

Translated and digested by the MILITARY REVIEW from an  
article by Otto Wien in "Wehrkunde" (Germany) July 1955.

SINCE the end of World War I there has hardly been a Soviet specialist who has not referred to the transportation system of the Soviet Union as her "Achilles' heel." In spite of its considerable development during the last two or three decades, the inefficiency of her transportation network is still an obstacle in the way of all industrial and economic planning.

Also, regarded from the strategic point of view, the vast expanse of the area, which offers the Soviets so many advantages in the conduct of a defensive war, has its obverse side in the problem of transportation. This is augmented by the situation in the north which, to be true, makes the entire Arctic front practically unassailable for invasion forces, but offers obstacles to the development of a transportation system that can hardly be imagined by the western European.

The great strategic significance of railway transportation is still as unquestioned as ever, despite all innovations in the field of military theory and weapons technique. Whether the Soviet communication net-

work, which is scarcely able at very best to meet the demands of the peacetime economy, would be capable of meeting the requirements of modern warfare, is a question which occupies an increasingly large place in the minds of the Soviet Command.

It must be borne in mind that the Soviet Union, with her area of 8,495,000 square miles, covers a sixth of the entire surface of the globe and, therefore, three times that of the United States. On the other hand, the total length of her railway network is only a quarter of that of the United States. While the Soviet Union is 61 times larger than the former German Reich, her present railway network is only 70 percent greater than that of the former German National Railway system.

Her waterways, which consist of 10 rivers more than 1,200 miles long and a total of 71,400 miles of rivers and canals navigable by ships or rafts, are almost the same length as her railway network. However, they are frozen over for many months every year and with the arrival of the spring thaws they rise to flood stage

and threaten the existence of all structures along their banks. Then there is the added disadvantage that the majority of all the rivers flow in a north-south direction and are, therefore, of little value for east-west transportation.

Everyone who went through the Soviet Campaign of World War II knows that the very different climatic and spatial obstacles militate against the construction and employment of automobile highways more than they do in western Europe. He is able to gain an idea of the still greater difficulties which have to be overcome in the construction of highways for long-distance transportation in the Asiatic portion of the Soviet Union.

It must be clearly understood in this connection that the enormous efforts which the Soviet Union is making to increase her industrial and agricultural production call for correspondingly greater capacity in her system of transportation.

There exists an additional problem in the concentration of industry in a few, narrowly bounded regions and in the wide spatial separation of the sources of raw materials which must be brought together over great distances for processing. In the minority of cases ores are found in the vicinity of the fuels that are needed such as oil or coal.

The individual populations and the feeding of them constitute factors which have no little influence on the Soviet system of transportation. The total population of the Soviet Union has increased since the turn of the century from 100 million to about 210 million. It has doubled, therefore, in half a century and is increasing at the rate of about 2 million per year. Of late, however, this increase in population has appeared to slow down as a result of the increasing movement toward the cities. On the other hand, however, the massing of population in certain regions which are not yet fully opened makes for considerable demands on the

Soviet transportation system in supplying consumers' goods and foods.

This becomes evident when one stops to consider that the urban population of the Soviet Union before World War I was only 11 percent of the total population while today it is more than 40 percent. The number of large cities with more than 500,000 inhabitants has risen from 3 to at least 11 during the last 30 years. The population of Moscow and Leningrad has almost tripled and, incidentally, this movement to the cities is not alone a concomitant of industrialization. It has been extended artificially to agriculture, also, by the methodical creation of so-called "agrocities." The shortage of agricultural labor which is becoming more noticeable is leading to increased mechanization of the various branches of agriculture. The villages are being replaced by agricultural stations to which the inhabitants, who formerly lived in the surrounding country, are drawn.

It is not only the increase of population but also the concentration of masses of human beings in limited areas which leads to complicated methods of supply and makes steadily increasing demands on Soviet transportation.

For decades all these factors have made transportation the most serious problem for the Soviet Union, a problem which has its repercussions on all planning. Economic considerations appear to have been dominant in this connection and military considerations to have been only secondary. Our further study of the transportation problem will show, however, to how great a degree economic and strategic elements interlock. An evaluation of a transportation system from a military standpoint in view of an armed clash and in disregard of all other factors is no longer possible in the age of atomic warfare. The Soviet Union will not be exempt from the fact that the course of a future war will be determined greatly by whether or not

she succeeds in maintaining her industrial and agricultural production. The more dependent her total economy is on her transportation capacity, the more vulnerable and sensitive she will be to disturbances of this system. All strategic planning of the West should be based on a careful study of this, the greatest and most difficult problem of the Soviet Union, and of her plans for solving it.

### Raw Materials

The tasks which confront the Soviet transportation system in the movement of raw materials to her industrial centers so that they can be converted into power was brought out very clearly during World War II. Due to the loss of vital sources of energy—coal, oil, and waterpower—in the European portion of the Soviet Union, the Soviets were forced to prospect their vast eastern areas for new mineral deposits for the production of energy and undertake the transfer of important industrial and powerplants to these previously neglected regions. After the war these industrial installations largely remained in their new locations and became the nuclei of great, new industrial centers.

These relocations effected during World War II have greatly accelerated the transfer eastward of the Soviet energy potential initiated three decades ago by the Soviet Government. In the meantime the prospecting of eastern sources of energy has revealed the fact that the Soviet Union is one of the richest regions in the world in coal, oil, wood, peat, and waterpower. This wealth of energy-producing elements distributed over the entire Soviet continent will, in increasing measure, favor the establishment of new industrial centers and permit a further shift into the Asiatic regions.

Today, there are 10 clearly differentiated industrial regions—some of them, it is true, only now being established—on

which the economic potential of the Soviet Union depends. Five of these are now in the Asiatic area east of the Ural Mountains.

In the European area these are: the Leningrad industrial region; the central industrial region around Moscow; the industrial area of the Donets basin; the industrial area of the middle Volga—this extends from Kazan to Stalingrad and is called the "second Baku"; and the oil and industrial area in the Caucasus around Baku and Grozny.

In the Asiatic area these are: the Ural industrial area around Sverdlovsk and Magnitogorsk; the central Asiatic industrial area around Tashkent; the Kuznetsk area; the industrial area around Irkutsk on Lake Baikal; and the industrial area under development in the Far East around Khabarovsk on the Amur.

With the continuation of this shifting policy during the opening of further sources of raw materials, the goal of the creation of as many economically self-sustaining and independent regions as possible will gradually be approached.

Hence, as time goes by, by means of a "better geography of industrial production" the traditional transportation bottleneck will be eliminated. The location of the sources of raw materials and their exploitation is at least of the same significance in the problem of transportation as the further development of the transportation network which certainly can be improved in point of efficiency, but cannot shorten the distances over which materials have to be transported. The reduction of the average distance of transportation which, during recent years, amounted to 435 miles for every railway-ton is of decisive importance. Forty percent of the railway freight must be carried over distances of more than 1,055 miles and 20 percent over distances averaging more than 1,987 miles. The constantly increasing amount of material requiring transportation has, there-



fore, led to a serious overloading of the railway network whose expansion is not keeping pace with the rapid development of industry. The Soviet railways must carry twice as much freight per mile as the American or European railways. The result of this is an extraordinarily high density of traffic over most of the main lines. Over these the trains move at a distance of a little more than a half mile apart. At first sight this may appear as an imposing accomplishment, but it is only the result of unsolved traffic problems.

The difficult problems the Soviet Union is faced with today in the transportation of raw materials for the production of energy may be shown by a few examples.

The coal from the Donets basin must not only be carried over a distance of 500 miles to the central industrial area around Moscow but also into the middle Volga area around Kuibyshev. This area even supplies the Leningrad area which is 870 miles away. Only when the central Soviet area can be supplied from the enormous brown coal deposits south and west of Moscow, and the Leningrad area from the Pechora field—Vorkuta, at the foot of the northern Ural Mountains—will railway transportation be appreciably lightened. The distance from the Pechora coalfield to Leningrad is very great, yet during the summer months the coal can be transported by river and sea routes, and by the storage of a reserve can practically obviate the need for railway aid.

The situation in the industrial area around Sverdlovsk presents more difficulty. In spite of the coal deposits in the Urals themselves, this area has up to the present time been supplied with coal from the Kuznetsk field 1,366 miles away. In order to reduce the cost of this long-distance transportation, the trains haul iron ore as return freight back to the Kuznetsk area where it is smelted.

The iron smelting works there were origi-

inally built for this very purpose. Recently, however, rich deposits of iron ore have been discovered near Kuznetsk so that the smelting of the Urals ore now plays but a secondary part. On the other hand, the long-distance transportation of coal to the Urals area cannot be discontinued in the future for it has been found that the Urals coal is not suitable for coking and, therefore, can hardly be used by the smelting industry around Sverdlovsk. Now, as in the past, the coking coal has to be brought from the Kuznetsk coalfield 1,370 miles distant as long as deliveries are not received from the new Akmolinsk-Karaganda coalfield 300 miles closer.

The Far East is also supplied with coal over a distance of 2,235 miles from the Kuznetsk area. This transportation will be required until the coal deposits of the Far East in the Amur area and on the island of Sakhalin lying opposite it have reached a sufficiently high point.

These figures, amounting to 23 percent of the total rail shipments in the Soviet Union, make it clear why the transportation of coal occupies first place in the over-all rail shipments of the country.

Coal's leading position in comparison with the other energy-producing elements will continue since the deposits extend over the entire central and eastern part of the Siberian area and will form the natural basis for future industrial areas. Thus rich deposits of coal and brown coal stretch along the entire southern Asiatic border from Tashkent over Lake Balkhash to Kuznetsk, and on over Lake Baikal into the Far Eastern Amur area. To be sure, the principal production will still be in the Donets area for a few years but the rapidly increasing production of the Kuznetsk area will, in the foreseeable future, exceed that of the "aging" Donets coalfield.

Among the other newly discovered coal deposits, the brown coal area in central Asia (western Turkestan) is of particu-



lar importance. It supplies over a short route the recently pushed textile, machine, steel, and chemical industry in the Tashkent area. Only by means of this nearby situated source of energy-producing raw material was this area able to effect its upswing.

The rich coal deposits in eastern Siberia between the Yenisei and the Lena Rivers present an inducement for future planning. The Lena coalfields extend across all of Siberia clear to the Arctic coast and in their surface extension of 154,400 square miles are about 10 times as large as Switzerland. They doubtless offer the greatest conceivable possibilities for development in the more distant future. Yet these eastern Siberian areas are so thinly populated and lacking in communications and, in addition, are climatically so severe, that large-scale production will begin only when circumstances make it imperative. In any case, however, this enormous wealth of coal deposits, which are distributed over all of the Soviet Union, will permit the formation of new industrial centers without it being necessary to bring in the energy-producing raw materials over long distances.

With this enormous preponderance of coal in total production of energy, the next energy-producing substance, natural oil, is far behind in the share it represents. The part played by coal is four times that of natural oil.

Whether the Soviet oil production, so often mentioned in the Western World, is due to an actual shortage appears questionable. When one considers the matter carefully, it becomes quite conceivable that the problem of the transportation of energy-producing substances has also operated in a decisive manner here. The geographic situation in the oil economy of the Soviet Union is by no means as favorable as in the case of coal. Nearly all of the paying deposits thus far discovered are in the European portion of the Soviet

Union west of the Urals. The center of gravity of production, with its output of 56 percent—in 1938 it was 88 percent—is still situated in the Caucasus oilfields of Baku and Grozny. The eccentric position of the principal field has always made long hauls necessary. After the discovery and start of production in the new fields in the middle Volga area, a considerable displacement and shortening of the oil supply routes occurred, but the noticeable unburdening of transportation was confined exclusively to the European area.

The great shift of industry to the east was not made appreciably easier by the discovery of these new sources. In the Asiatic portion of the Soviet Union, so far, no oil deposits of any consequence have been found except in the southwest portion at Tashkent and in the extreme east on the island of Sakhalin. There is no doubt but that the Soviet Government is making special efforts to locate oil in the Siberian areas, but thus far it does not appear to have succeeded in closing this large gap in oil production. In any case the geographic situation of the oil deposits will not permit a thorough decentralization of supply over the broad Asiatic area such as exists in the case of coal. If it were desired to operate new industrial establishments in Siberia, using oil as a source of energy, oil transportation over vast distances would at least be necessary. It is, therefore, entirely obvious why the Soviet Union has given first place to coal for the production of energy.

We find, perhaps, in this situation a good explanation for the fact that the Soviet Union, in spite of the dynamic economic impulse that is characteristic of her, in recent years has manifestly neglected the field of oil production which to us seems so important.

During the period 1910 to 1950 the following increases in production were noted: Soviet industrial production, 1,400 percent; Soviet coal production, 900 percent; So-

viet oil production, 400 percent; and world oil production, 1,100 percent.

Soviet oil production was: in 1940, 31 million tons or 10 percent of the world production; in 1950, 37 million tons or 7 percent of the world production; and in 1955, planned production, 70 million tons.

From the foregoing it is apparent that by the end of the present 5-year period a considerable increase is planned. It is also to be noted that this high production goal was not prescribed until after the publishing of the 5-year plan for according to the original plan about 60 million tons was to be reached by approximately 1960. The impression is thereby confirmed that the low production of the past has been less a result of actual lack of oil than of a curbing of requirements.

This appears still more likely to be the case when one considers the surprisingly small amount of Soviet motor vehicle traffic. The geographic and climatic conditions of the Soviet Union will, in the future as in the past, limit the use of motor vehicles mainly to short-distance and distribution hauling. We can hardly expect the same development of long-distance transportation means as, for example, in western Europe or the United States.

When one stops to consider that the 43 million motor vehicles which were in operation in the United States in 1950 required more than a third of the American oil production, while during the same period only 3 million motor vehicles were estimated to have been in operation in the Soviet Union, it becomes apparent that the Soviet national economy with its oil requirements cannot be compared with that of other nations on the basis of figures alone.

Even the oil requirements of the Soviet Army have not previously been as high as was often assumed. To be sure, one-fourth of the total Soviet oil production has in the past been placed at the disposal of

the army—inclusive of the air and naval forces—but there is little probability that this high annual assignment was necessary for the training and maintenance of its peacetime strength. The view so often held in western Europe that the Soviet Army is "supermotorized," is not correct. Only about a third of the approximately 175 peacetime divisions are motorized. It may, therefore, be assumed that the oil assigned them is not all used, but stored.

This measure may follow naturally from considerations relative to transportation. Because of the extremely long frontiers of the Soviet Union and the vastness of her terrain, the Soviet Army is divided into six independent groups whose headquarters are located in Leningrad, Minsk, Odessa, Tiflis, Tashkent, and in Khabarovsk on the Amur in the Far East. Each of these army groups is to be able to operate entirely independently. Therefore, each of them, within its own district, has its supply base which is largely stocked in advance and from which, in the event of a defensive war, all needed supplies, inclusive of oil, can be reached over a short route. In order to shorten these transportation routes use is made of the same principles of decentralization as in industry, for under present planning industry will be spread over the entire Soviet continent in as many independent, self-contained districts as possible.

The entire power supply system of the Soviet Union has heretofore been organized for keeping the oil requirements of the Soviet Union considerably under the average of other countries. Whether or not this is planned for the future and can be adhered to in practice will remain an open question. What her intentions are with reference to her surprisingly stepped-up oil production are not yet clear. How much higher production can be carried depends largely on the confirmation of her estimated oil reserves.

The following fact, however, is of im-

portance: with increasing motorization the Soviet Union will most likely be able to avoid a possible bottleneck by the synthetic production of oil. In all portions of her territory she has adequate coal supplies excellently suited for synthetic processing or for processing by hydrogenation. The Soviet Union would, therefore, be able to establish synthetic fuel bases in even her remotest areas.

Thus far no precise information has been available concerning the establishment of such plants. It is only known that the Magdeburg and Pölitiz hydrogenating works in Soviet-occupied Germany, which were torn down, were set up again in Dzerzhinsk near Gorki and at the present time are producing aviation gasoline. In addition to these, two other German installations are said to have been set up again near Irkutsk on Lake Baikal.

#### Railway Network

In any case, there is no doubt that motor fuel production from coal can assume very great importance in the Soviet Union as soon as enough experience has been gained in this field. By means of this the obstacle of long-distance transportation could be overcome in this case also, and Siberian areas, with their lack of oil, could be supplied over short routes.

In addition to coal and oil many other substances capable of producing energy have a very important place in the overall energy production of the Soviet Union. These are, especially, water—the hydroelectric stations producing electric power—wood, peat, oil shale, and natural gas. We shall not consider them in this connection since they are of no particular importance in transportation. We shall deal further with water only in its connection with the Soviet waterways network.

A glance at the Soviet railway map shows clearly the difference between the development in the central European area

and in the newly opened areas east of the Volga. The center of gravity is definitely still in the west. However, the lines pushed eastward by the Soviets during the last three decades have already changed the picture considerably since the time of the czars. On their seizure of power in 1917 they took over as their heritage in the Asiatic area only the Trans-Siberian line from Moscow, through Sverdlovsk, Krasnoyarsk, and Irkutsk to Vladivostok. Further, as a second important connection between European Russia and the central Asiatic area, they took the line from Kuibyshev to Tashkent.

When the central planning for the systematic industrialization of the country began after 1925, a shift from west to east was also planned for traffic. Due to steel shortage only one important route, the Turk-Sib, could be completed during the first 5 years. With its 1,250 miles of track along the Chinese frontier, this route connected the central Asiatic Turk-estan area with the Trans-Siberian line in the Kuznetsk area. It marks the Soviet interest in two areas which, today, play a large role in the production economy of Asiatic Russia.

Shortly afterward the industrial line was begun which runs from the Turk-estan area to Lake Balkhash through the new Akmolinsk-Karaganda coalfield to the Trans-Siberian line and on to the Ural industrial region.

With these multiple connections into the central Asiatic area and the border areas opposite Iran and Afghanistan, more favorable conditions have also been created from a strategic point of view.

Indicative of the sudden eastward shift during World War II was the new coal line into the northern Ural region near Vorkuta. The enormous coal deposits on the shore of the Arctic Ocean had suddenly become a matter of vital import after the loss of the Donets basin. This line, about 625 miles long, was completed in great

haste by the labor of hundreds of thousands of civilian prisoners and prisoners of war. Through the construction of this line and the continued employment, even today, of the prisoners of war in the coal mines, the name "Vorkuta" has gained a frightful fame.

After the war a second and no less bold and difficult project was begun along the Yenisei River. The mouth of the Yenisei at Dudinka is to be connected with the Trans-Siberian line at Krasnoyarsk straight through the swampy forests of Siberia which, thus far, constitute a region entirely untouched by civilization. The northernmost and southernmost stretches of the line have already been completed and are in operation. The construction material, locomotives, and cars for the northern part were brought by sea to the mouth of the Yenisei, reloaded into shallow-draft boats and, in this manner, transported up the river to Lake Pyasina. From there all the equipment and material was pulled over the snow-covered tundra by tractors on giant sleds.

With the arrival of thawing weather, however, the railway fills sank in many places into the bottomless morass. Violent flood waters in the streams destroyed the bridges that were under construction and undermined great stretches of the fill. Great numbers of prisoners of war were put to work in these places to repair the damage at the cost of inhuman suffering and effort. Two years ago the first section of the road was opened for trial operation. However, the line continued to be made impassable at times by drifting snow. Time and again entire trains were overturned by the violence of the polar winds. Not until 1954 was the line made somewhat secure for traffic. High wooden fences were erected along the entire line with narrow gaps at regular intervals through which the polar wind passes thus sweeping the tracks free of snow.

The greatest construction project which

the Soviet Government began as far back as the second 5-year period, but which will still require years of work before completion, is the new southern Siberian railway line which runs from Kuibyshev on the Volga to the east by way of Ufa and Magnitogorsk. At Akmolinsk it crosses the industrial line from Lake Balkhash and, crossing the Turk-Sib line, extends into the great Kuznetsk region. The eastern section of this line, the 435-mile long eastern Siberian portion, which runs northeastward from the Kuznetsk Basin to Ust-Kut was opened during the winter of 1954-55 according to Soviet press reports.

The terminal point, Ust-Kut, is of great significance since, as the river port of the Lena River, it constitutes the connecting link with the "route to the riches of the north." According to unconfirmed reports, this section of the line, which is now opened, is to constitute the first section of the northeastern Siberian line which the Soviets plan to complete ultimately. It is to be continued from Ust-Kut, by way of the sea port of Magadan, to the Chukot Peninsula on the Bering Strait. Reliable data relative to this alleged project, which would require decades of labor, are not available.

The line now open to Ust-Kut lends a certain degree of probability to the project, especially since the construction of the Baikal-Amur line running eastward from Ust-Kut toward the Pacific has seemingly been halted, at least for the time being. The construction of this line was begun in the late 1930's and was supposed to form a line to the Far East parallel with the Trans-Siberian line. This line obviously possessed greater strategic than economic importance, providing a supply route in case of a Japanese attack from Manchuria which would be less exposed than the Trans-Siberian line, which was closer to the frontier.

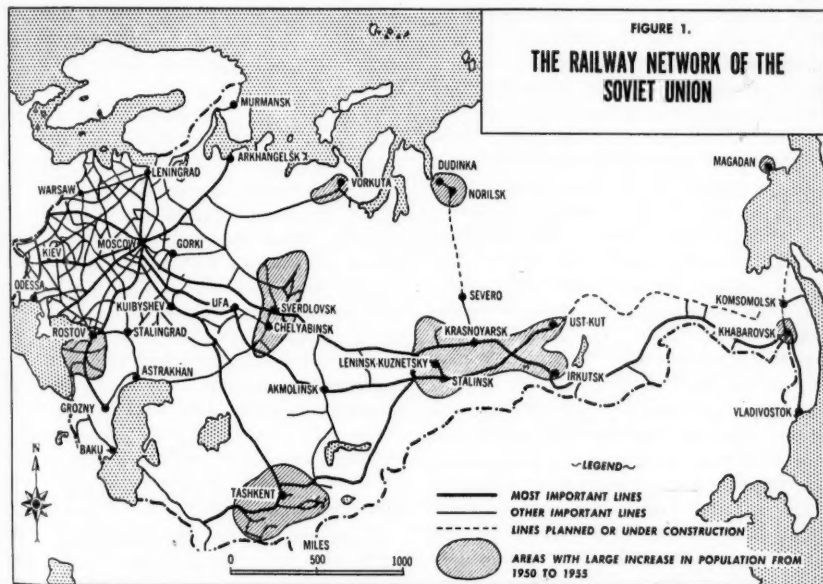
Since the political situation in Japan

and Manchuria has completely changed, it is evidently believed that the completion of the Baikal-Amur line can be temporarily halted. It is, therefore, not inconceivable that Ust-Kut constitutes the jumpoff point for a new, gigantic railway construction plan in a new direction, which could be motivated by easily conceived strategic considerations.

The position of the Soviet Union in the Far East changed not only after World

Baikal, passing through the northern part of Manchuria in the direction of Vladivostok and Port Arthur. Through the elimination of the Japanese threat and the acquisition of this railway line, the construction of the Baikal-Amur line was, at first, made unnecessary. With the Changchun line at her disposal, the Soviet Union had a secure and considerably shorter connection with the Pacific ports.

This situation was again altered 4 years



War II by the expulsion of the Japanese from Manchuria in September 1945, but also in a still more decisive manner after the proclamation of the Chinese Republic in September 1949.

By the victory over Japan the Soviet Union first gained three points of entry into Manchuria: Port Arthur, Dairen, and a share of the Manchurian railway lines—the Changchun Railway Line. This was a railway line that was of extreme importance to the Soviets and branches off the Trans-Siberian line east of Lake

later by Mao Tse-tung's victory in China. In the Chinese-Soviet Treaty of 14 February 1950, the Soviet Union was obliged to renounce her prerogatives in the Manchurian railway system in favor of her new, Chinese Communist friend. In exchange, however, unforeseeable economic prospects were opened to her requiring the hasty construction of efficient transportation routes from the Soviet Union to China.

The only railway line that heretofore had joined the two countries was a branch of the Trans-Siberian line across Manchu-



ria which was quite incapable of meeting the future transportation requirements. Economic collaboration was to consist of the development of Chinese industry which was to be aided in the early stages by the Soviets. The Soviet Union promised to build 141 installations in the fields of metallurgy, the coal, oil, and chemical industries, powerplant construction, hydro-techny, agriculture, transportation, and signal communications.

As a consequence the construction of these railway lines between the Soviet Union and China was immediately begun. Two of these were to run through Outer Mongolia and one of them, starting at Lake Baikal, was to run through the Mongolian capital city, Ulan Bator, through the Gobi Desert to Chinese Paotow. According to Soviet press reports, this latter line is about to be opened. The construction of a second branch-line east of the Trans-Siberian line through Choybalsan to Kalgan is, according to unconfirmed reports, already under way. Both lines are directly connected with the railway network extending to Peking and the south.

At the same time, a branch is being extended from the Turk-Sib line along the famous Chinese Wall through Chuguchak and Wusu toward the southeast. From the other end, the line is reported to have passed Landshu and to be headed toward the northwest. With this line, a considerably shortened link will have been established between China and the great industrial centers around Sverdlovsk, Kuznetsk, and Tashkent, which is to be complemented by a projected auxiliary line from Wusu to Alma-Ata.

That these new lines may acquire not only an economic but also a strategic significance was shown 2 years ago by the Indochinese war in which the Soviet arms deliveries to the insurrectionists, due to the absence of a shorter link, had to be brought in a roundabout manner over the Manchurian railway system, hence over

a total distance of more than 7,450 miles. A retarding factor—which will continue to exist—was the difference between the Soviet and Chinese track gauges which makes transloading or, under modern conditions, the changing of trucks necessary.

An idea of the demands made on the transportation capacity of the Soviet railway lines, due to the new relationship between the Soviet Union and China, may be gained by considering that in the year 1936 China obtained but one-half of 1 percent of her imports from the Soviet area, while in 1952, they amounted to 72 percent.

This enormous increase in transportation appears lately to have led to a serious shortage of rolling stock. To be sure, in 1950 the Soviet Union was estimated to possess 25,000 locomotives and about 1 million cars, but there are a number of indications that the production of rolling stock has not kept pace with the transportation requirements. Especially in the building of cars the goals set do not appear to have been reached, although during the war and especially since the war, considerable effort has been made to increase the output of the firms making railway cars. From 1936 up to the present time the number of these firms has been increased from 16 to 36.

According to the Soviet plans, their production capacity should be equal to any future need together with a reserve capacity for supplying eventual military needs. Thus, for example, the giant Nizhni Tagil railway car plant in the Ural area—80 miles northwest of Sverdlovsk—was changed over during the war to the manufacture of tanks. In 1946 it again resumed the manufacture of railway cars and since that time has increased its yearly production from 50,000 to 70,000. This plant possesses an underground assembly room equipped entirely with German and American machines, and employs a total of 16,500 workers in three shifts.

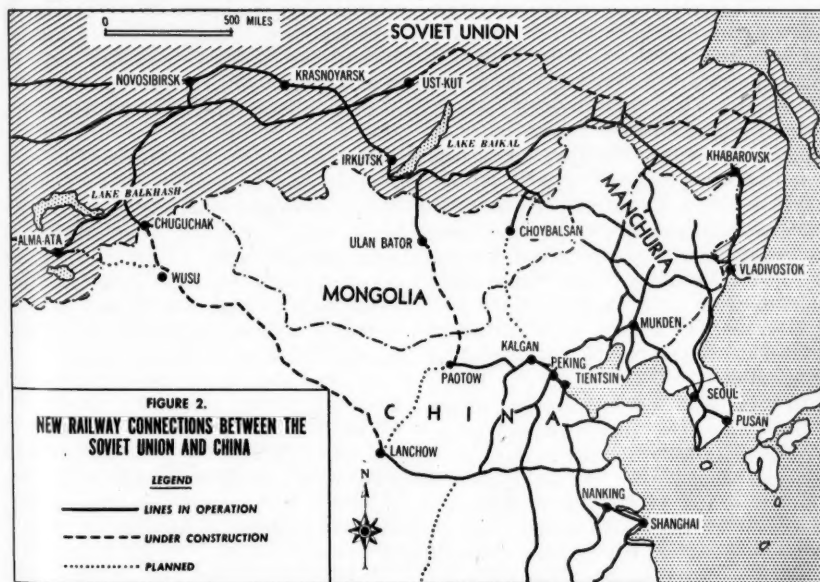


The fact must not be overlooked that the wider gauge of the Soviet railways permits the transportation of considerably heavier loads than in America or Europe. Closed cars of 20, 30, 50, and 60 tons are given first place. In addition, flatcars up to 147 feet long for iron or steel parts and low-slung cars for the transportation of tanks and guns are built.

### Waterways Network

In spite of the great effort being made transportation will not be able with the

improvement of the transportation conditions over the interior waterways. On the basis of the goal set for the 1951-55 plan alone, a reduction from 82 to 75 percent of the railways' share of the total freight hauling is expected. It is planned to increase interior waterways transportation by about 80 percent during this period. This increase, which at first sight seems very significant, loses import when one takes into account the fact that interior waterways shipments had previously handled but 6 percent of the freight. In view



lines available to handle the constantly increasing quantities of freight. The Soviet plans, therefore, look forward to the shifting of a considerable portion of the transportation load to other traffic means.

It is hoped to eliminate a part of the bottleneck by the development of short-distance transportation service and oil pipelines.

The greatest hope in the plan to lessen the burden on the railway network is the

of the great number of navigable streams in the Soviet Union this small share of the hauling is odd in itself and the more so when one stops to reflect that the Russian rivers, especially the Volga, have been used since the earliest times for freight transportation and that the development of the canal system was begun under Peter the Great.

Naturally the small amount of freight carried is due, in part, to the long in-

interruption of traffic during the winter months. In the Black Sea and Caspian Sea areas, the rivers are solidly frozen over from 70 to 100 days and in the vicinity of the Arctic Ocean for 200 days out of the year. No 5-year plan will alter this situation. The case is different where primitive methods of transportation and insufficient channel depths are involved.

Only a few years ago freight was towed so slowly by horses over the Volga and the system of waterways connected with the Baltic, that a person could keep up with it on foot. As a result of this, the time required for transportation by this system was endless. Flour from Kuibyshev on the Volga for the supply of Leningrad often required 1.5 years to make the trip—depending on whether it was halted by the winter ice. The primitive freight boats were torn down on reaching their destination and sold for fuel or building material.

These primitive conditions have now, reportedly, been remedied. Work was begun in the 1930's on a vast improvement and expansion plan. The aim of the plan is so broad that a complete alteration of geographic structure will be effected in some regions.

To begin with, the improvement of the waterways will be mainly confined to the European portion of the Soviet Union with principal emphasis on the Volga as the most important traffic artery. The central point of the entire system and, at the same time, the world's largest inland port city is to be Moscow. The following routes for large vessels are planned: the Volga system; Volga-Baltic; Volga-Arctic Ocean; Black Sea-Baltic; and Black Sea-Caspian Sea.

These waterways which have been partially modernized are eventually to have a uniform channel depth of about 16.5 feet and thereby permit the passage of vessels of up to 12,000 tons. The locks of the Volga-Danube canal, which are already in operation, are even intended for vessels

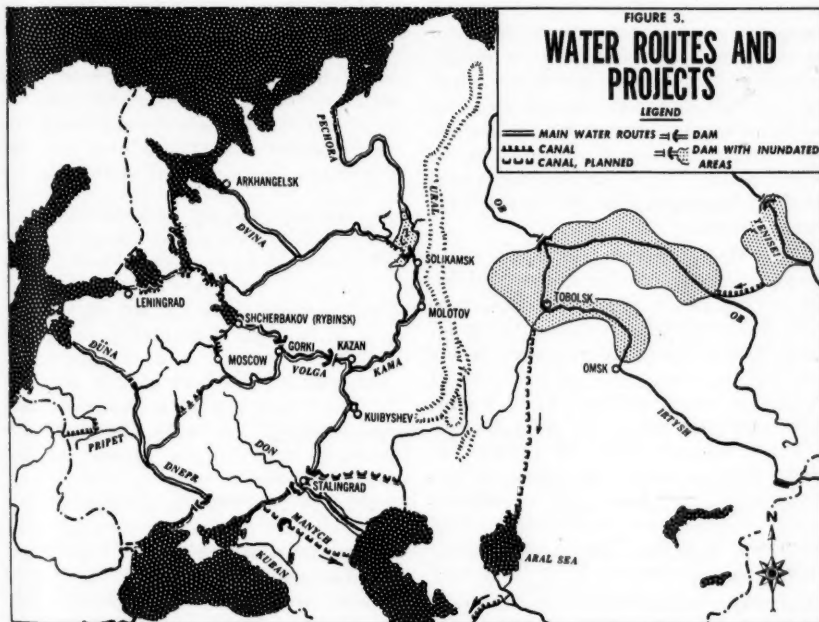
of up to 18,000 tons. What a revolutionary change will come about in the over-all transportation of European Russia after the completion of this plan requires no explanation. Through the possibility of great mass transportation, the system can give effective service in spite of the short periods during which the waterways are free of ice. Also, from the strategic point of view entirely new perspectives are opened for the transfer of light naval vessels between the Arctic Ocean, the Baltic, the Black, and the Caspian Seas.

The limited framework of this study does not permit a more detailed description of the work in connection with the canals and other expansion projects. We shall only dwell briefly on the Volga system as the backbone of the entire waterways system. By the creation of eight stages of impoundage between the Moscow-Volga canal and Stalingrad, the river is to be transformed into a series of giant lakes. On the upper course of the river the first three of these lakes have already been created. The largest of them is that of Rybinsk, with a water depth of nearly 60 feet and a surface area of about nine times that of the Bodensee. Farther down stream the size of the planned artificial lake is even greater because of the lesser fall of the river. The largest installation, which is already under construction, is at Kuibyshev. In addition, this will eliminate a Volga bend which is about 80 miles long. With a water depth of 105 feet it will give rise to the largest of all the Volga lakes, whose surface area will be 18 times that of the Bodensee. It will, it is said, be about 175 miles long and back the Volga up to a point beyond Kazan. During heavy storms wave heights of about 6.5 feet are expected, so that all the installations connected with the river and ocean shipping will have to be altered.

In connection with this development of the Volga system, the most careful account has to be taken of the fact that for cen-

tures now, the surface level of the Caspian Sea has been falling and, today, is already 88.5 feet below sea level. This serious phenomenon is principally due to an insufficient flow of water from the Volga. As a result of the impounding installations now under construction, the evaporation area of the Volga is increased still more and the falling of the Caspian Sea correspondingly hastened. In order to

which the Ob and Yenisei are to be dammed. Their waters will then cover a surface about the area of the German Federated Republic. The resulting lake will be called the "Siberian Sea." The aim here is less an expansion of waterways than the creation of an enormous water reservoir whose impounding walls will be raised about 230 feet and on the Yenisei nearly 330 feet, causing the water to re-



avoid the dangers thus involved, vast plans have been developed. In the north the waters of the Pechora are to be dammed and carried to the Volga by way of the Kama River. For supplying the Caspian Sea with water, the Manych canal will be dug bringing water from the Black Sea by way of the Sea of Azov.

In connection with this, however, there is a far greater project planned for the other side of the Urals. This project consists of the so-called Davidov plan under

verse the direction of its flow from north to south. A canal—the Davidov Canal—will constitute a link to the Aral Sea and from there to the Caspian Sea. This last portion has already been started. The time required for the completion of the entire project is estimated, by Davidov, at 20 years.

Besides the ultimate changes expected in the "Siberian Sea" area, one of the most important reasons for this project consists in the irrigation and reclaiming

of the arid steppes and deserts of central Asia.

After the completion of this gigantic project, it is confidently believed that the hydraulic economy of the Caspian Sea can be balanced. Not until then will it be possible to use the Volga throughout its entire course as a shipway for major vessels. Heretofore, the sand-filled outlet and the low water level of the Caspian Sea have not permitted the entrance of oceangoing vessels, but have made necessary repeated transshipment—especially of the oil from Baku onto river boats. Out of consideration for the planned regulation of the water level of the Caspian Sea, the construction of a channel in the mouth of the Volga suitable for oceangoing vessels appears temporarily to have been postponed.

That the numerous artificial lakes planned in the framework of the construction of waterways will at the same time solve many problems relative to power production can only be mentioned briefly here. As an example we cite the case of the Volga, whose hydroelectric plants, when completed, are to deliver a total of 43 billion kilowatt hours of current annually. This is about 48 times the capacity of the great Jochenstein powerplant on the Danube, now under construction. The power from the "Siberian Sea" project will be still greater.

Differences of opinion could exist relative to the strategic value of the waterways system. As long as it remains intact, it will undeniably possess great value from the point of view of armament production potential and, to a limited extent, can also be used for military transportation. Its weak point, however, resides in its vulnerability to Western air attacks. In this connection, we mention the grave consequences of the destruction of the Möhne dam by British aviation during World War II. Air attacks resulting in the destruction of the Volga

system would be incomparably more serious to the Soviet Union from the military standpoint and from that of armament production. The loss of electric power alone could cause a shutdown of a large part of Soviet industry. This danger will continue to exist, particularly until the development of the coupling system between power networks, now only begun, has been completed. It is true, however, that the Soviet Government likewise has large and far-reaching objectives in this direction.

To what extent the large shipways and artificial lakes can be used as obstacles in ground warfare will depend on the prevailing situation and also to a considerable extent on the season of the year.

#### Highway and Air Transportation

We have already called attention to the difficulties of long-distance vehicular transportation in the Soviet Union. The fact that the Soviet Union is not up with the time in highway construction is due, in addition to spatial and climatic conditions, partly to the lack of solid construction materials—stone is scarce almost everywhere in the Soviet Union. This is especially true of the broad, southern steppe regions.

Until World War II, there was but a single modern automobile highway from Moscow to Minsk. After the war a solid highway was built all the way to the Crimea. In addition, the automobile highways built by the Germans during the occupation have probably been maintained to a certain extent. On the other hand, the great state highways built during the time of the czars are today in an almost completely deteriorated condition.

Only in the eastern Siberian areas and in the far north leading to the coast of the Arctic Ocean where the truck is the sole means of transportation have solid highways allegedly been constructed which on the more recent maps are indicated as important traffic routes. Generally speak-

ing, however, motor vehicles continue to be used as an increasingly important means of local transportation in short-distance hauls in industrial regions. Apparently an effort is being made to provide these local highway networks with solid surfaces. From the strategic point of view, however, the experience of the past that the Soviet Union's tracklessness is an advantage rather than a disadvantage in the defense of the country is still valid.

Concerning the work of Soviet air transportation, we have no reliable data. We are obliged to confine ourselves to deduction, which gives no accurate picture. There is nothing accurately known in regard to the facilities or the length of the air routes. It is definitely known that there is regular service not only in European and Asiatic Russia but also over the line to Peking. All things considered, however, it can be safely stated that because of its limitation in point of capacity, air transportation can play only a subordinate role in the carrying of

freight and, in view of the vastness of the Soviet area, it will not, for some time at least, become decisively important.

In conclusion, it may be said that at the present time as in the past, the problem of transportation constitutes the weakest factor of the Soviet war potential. In the event of war the Soviet Union would find herself faced with the danger of Western airpower gradually destroying her traffic networks, thereby crippling her entire economic setup. The foregoing study shows, however, that the Soviet Government obviously fully recognizes this problem and that the measures that have been introduced appear quite suited for overcoming the difficulties in the course of time. There is no doubt that all the numerous projects—completed and planned—will result in a considerable easing of the strained transportation situation in the next few years. We shall, however, do well to keep as close a watch as possible over this matter if we wish to avoid erroneous conclusions and unpleasant surprises.

## How Many Air Forces?

Digested by the MILITARY REVIEW from an article by Air Marshal Sir Robert Saundby in "The Aeroplane" (Great Britain) 1 July 1955.

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FROM the very earliest days of military aviation the great powers have been trying to discover the most efficient and economical way of organizing airpower. The problem, after more than 40 years of trial and error, is by no means solved and all kinds of different arrangements have been, and are still being, tried out.

In this country we have always had a unified air service except during the 4 years from July 1914, when the naval wing of the Royal Flying Corps became

the Royal Naval Air Service, until April 1918 when the Royal Air Force was formed as a result of the hard logic of war.

The United States, on the other hand, has had a long experience of separate naval and army air services. They entered World War I too late for the severe drawbacks of two separate air forces to become intolerable, and so this organization persisted until the end of World War II. It never worked really well, however, and the United States Army Air Force had become a separate service in all but name in 1942, when its Chief, General Arnold, was given a status equivalent to that of the Navy and Army Chiefs of Staff.



### Soviet System

In the Soviet Union the system is very different. The Soviets have advanced further than any other great power toward a system of one integrated armed service, controlled by a Ministry of Defense. The Soviet Army is a composite term covering not only the land forces, but the Navy and the Air Force as well. I remember once during World War II meeting a colonel in the Soviet Navy.

It is not easy to discover how much autonomy is enjoyed by the three main branches of the Soviet fighting forces, but it would seem to be somewhat restricted with the army as the dominant arm. The Soviet Union is not—and does not need to be—a great seapower, and it may be that the Soviet Navy is regarded as subsidiary and relatively unimportant. Its air forces until recently have been confined almost entirely to army support duties, and have been trained and equipped for a tactical role. There is some evidence that the Soviets are now building a considerable number of long-range heavy jet bombers, presumably for strategic air operations, and it will be interesting to see if this will result in any modification of the present organization.

Thus among the three great airpowers of the modern world we find a marked divergence, both in past experience and present practice. Furthermore, the situation is still very fluid, and it seems probable that the near future may see considerable changes.

In which direction are we likely to go? Is there to be a move toward a greater concentration of air forces under centralized control, so that their offensive and defensive powers can be used to maximum effect, or are we to see a devolution of airpower among the services and a return to the days of multiple air forces?

Airpower emerged from World War II fully fledged, dominating all warfare by land and sea. In Sir Winston Churchill's

famous words, it is now "the supreme expression of military power, and fleets and armies, however necessary, must accept a subordinate rank." The coming of weapons of mass destruction, of which the hydrogen bomb is the most modern manifestation, and the enormous development in aircraft performance that has occurred during the past few years have emphasized the truth of these words. It might, therefore, be supposed that the pre-eminence of airpower would be universally recognized, and that modern supreme commanders would be airmen directing the vital operations of the supreme expression of military power, and coordinating the necessary but subordinate operations of the sea and land forces.

This is, of course, not so. The supreme commanders of the North Atlantic Treaty forces, the military hierarchy in NATO itself, and the standing group in Washington are all either admirals or generals. It is airpower, although officially designated as the main deterrent to global war and our most effective defense against aggression should it ever occur, which has had to accept a subordinate rank.

In drawing attention to this strange anomaly, I am not in any way questioning the competence of those who hold the key military posts in NATO. I am not actuated by those motives of interservice rivalry so often attributed to retired officers. But I am genuinely apprehensive lest the strategic operations of airpower, especially during the critical opening phases of a large-scale war, might in these circumstances be subordinated to the demands of the older services and diverted from their vital tasks.

No doubt it is because of this that Bomber Command and the United States Strategic Air Command are not included in NATO, but this in itself is the source of a different weakness. As far as I am aware no effective means exist of coordinating the operations of the two



long-range bomber forces. They are under independent commanders, in separate headquarters thousands of miles apart. Although it is unlikely that we could agree to put Bomber Command under an American supreme commander, since we must be free to use it, if necessary, against targets which might be threatening our very existence, it would seem to be of the first importance to set up appropriate machinery, such as we had in World War II, for coordinating the efforts of the two bomber forces.

### Centralized Control

In addition to this the entire air organization of NATO appears to be far from satisfactory. Instead of being centralized in the hands of a supreme air command, airpower seems to be in danger of being chopped up, as it were, into separate parcels.

It is evident that Field Marshal Montgomery, the Deputy Supreme Commander of NATO forces, is not happy about this tendency, for he said, in his lecture to the Royal United Service Institution on 21 October 1954, that the West had:

*Sacrificed flexibility by basing the air command organization on the requirements of 'direct support' of the land forces, whereas it should be based on the organization necessary to gain the greatest measure of control in the air. Airpower is indivisible. If you split it up into compartments you merely pull it to pieces and destroy its greatest asset—its flexibility.*

*We must win the war in the air. We will not win it unless the air forces are allowed to regain their flexibility and unity, and unless air command is organized accordingly. It is vital that this matter be tackled at once on the highest political level.*

One would have thought that the lessons of World Wars I and II, and all the experience of the Western Powers during the past 40 years, would have driven

home to all concerned the paramount importance of a centralized control of our airpower. One might have hoped that the strong reluctance shown by democratic peoples to spend money on armaments would prevent us from indulging in expensive duplications of air effort. What, therefore, are the forces in this country—and still more in the United States—which are tending toward this devolution of airpower?

For a long time the argument for dividing airpower between the Army and the Navy was based on the view that aircraft by themselves, were capable of little offensive power, and, therefore, could most powerfully influence the conduct of a war by performing ancillary tasks in support of sea and land operations. If this were so, the argument ran, then clearly each of the older services should have its own air arm.

This argument is no longer tenable. It is impossible to deny the offensive power of modern aircraft, armed with weapons of mass destruction, and it has in fact become so great as to arouse widespread fear and horror. At the same time, it cannot be denied that armies and navies more than ever need powerful air support if they are to carry out their tasks successfully. The arguments now put forward for giving a slice of airpower to the older services have, therefore, quite a different basis.

The Army and Navy freely admit that modern airpower has a far-reaching effect on their operations. Their powers and opportunities are tending to become so limited, so subordinate in character, as long as they are confined to the use of ships or land forces, that a demand has arisen for the provision of substantial air services within their own organization to enable them to discharge their former responsibilities. The argument now runs that the services are differentiated, not by their weapons, but by the functions they have to perform.

This is an argument that simply cannot be brushed aside, or met solely by a repetition of the doctrine that to be fully effective airpower must be centrally controlled and the maximum use made of its remarkable flexibility and power of concentration. For it is still true that airpower enters largely into, and even dominates, all sea and land operations, and that this airpower must be provided either by the Royal Air Force or by additional military and naval air services.

It is generally agreed that the long-range bomber force and air defense, in its broadest sense, are the business of the Air Force. But, apart from this, there is a tendency to believe that the other manifestations of airpower are so bound up with the operations of the older services that there is no good reason why they should not own and control the air forces needed for these tasks.

This process has gone much further in the United States than it has in this country, no doubt because financial restrictions are less severe, and it is, therefore, worth having a glance at the United States air organization in order to see the results of this way of thinking.

The United States Navy not only has a powerful carrier fleet, soon to be reinforced by the three enormous *Forrestal* class carriers built at a cost of over 200 million dollars apiece, but it also possesses two land-based air forces. One is the United States Naval Air Force, a large organization equipped with fighters, bombers, and strike, reconnaissance, and transport aircraft, including flying boats. The other is the United States Marine Air Force, a relatively small, highly trained service, organized and equipped to move at short notice and to take "fire brigade" action wherever needed.

The United States Army, like ours, has its own observation post squadrons for artillery spotting and control although on a much larger scale. It is also playing

with the idea of setting up its own air-transport service, and even its own tactical support air force.

The duplication of effort involved in this diffuse air organization is formidable. Wasteful competition tends to replace economical cooperation. Separate research and testing establishments are maintained by all three services which work in watertight compartments. Training schools are duplicated and even triplicated. All three services are carrying out their own research and development, on parallel lines, in guided missiles. Worst of all, each of the older services is struggling to build up its air strength in the vain hope of being able to meet its own air requirements at peak moments in war.

These trends have a powerful influence on our own services. Successful attempts to set up new branches of naval and military aviation arouse great interest in this country and are bound to stimulate efforts to follow suit.

The argument against allowing the Army and Navy to set up their own air arms can be very simply stated. It has never been set out more cogently and briefly than by Field Marshal Montgomery in the lecture which I have already quoted.

Referring to the question of supplying armies in the field by means of an airlift, he said:

*No nation could afford to give to one service the amount of airlift that service would need at any particular peak moment in war. . . . If the airlift organization is to be an organic part of an army, it will cost more than if it were under the air forces; and the army will never have enough. In wartime great flexibility will be needed, and the ability to effect rapidly a large concentration of airlift within a theater of war will be necessary. Great skill will be needed if the lift is to be maintained in all weathers. Air cover and protection will be necessary. An*

*airlift organization must be dovetailed into air operations; you cannot separate an air transport system from air operations.*

For airlift one can substitute any other form of air activity and the argument will remain perfectly valid. Observation post and shipborne aircraft can, however, be allowed to be an exception to this general rule, as it is mutually convenient that they should be an integral part of the Army and Navy.

#### Tripartite Amalgamation

There are some responsible people who take the view that, during the next decade or two, when aircraft with human crews have been replaced by guided missiles, and when artillery, both shipborne and on land, will have given place to the same master weapon, there must come about a much closer integration of the armed services. In fact, they go so far as to predict that the amalgamation of the three services will come about naturally in the course of the next few years. Already we have heard a proposal to unite the Royal Navy and the Royal Air Force debated in Parliament.

If, it is suggested, this amalgamation must come about, it matters little in the

meanwhile whether or not the Army and the Navy are allowed to set up their own air forces, as they will all be fused together in due course. While not denying that this amalgamation may come about, or wishing to argue in any way against it—provided that all three, and not two, of the services are involved—I do not think that it is true to say that devolution of our airpower in the meantime does not matter.

We rely on our airpower as the main deterrent to global war, and if we should allow it to be weakened, or reorganized in such a way as to curtail its effectiveness, we may well be offering an invitation to aggressors. Since the prevention of full-scale war is the main object of our defense policy it seems to me that it matters a great deal.

In summary, it would appear that in allowing the Royal Navy to own and control shipborne aircraft—and, possibly, in the future, shore-based minesweeping helicopters—and the Army to own and control its observation post squadrons, the correct balance has been struck. Any further move toward devolution could not fail to involve expensive duplication of effort, and would frustrate that concentration of force at the decisive time and place which is the key to the successful use of airpower.

Modern tactical air forces are capable of engaging in two distinct types of combat—the all-out war and the peripheral or “brush fire” war—with nuclear weapons or without them. These forces, composed of highly mobile units capable of rapid deployment to remote parts of the world, now possess the capability of delivering atomic or other weapons interchangeably and with deadly and decisive effectiveness to accomplish the three basic combat tasks of tactical air—counterair, interdiction, and close support. Their increased mobility and flexibility exploit to the fullest their tremendous firepower potential with much greater combat effectiveness regardless of time, distance, or target. Our tactical air forces now are the principal deterrent to periphery aggression, in the same way that strategic air forces have been the principal deterrent to a global war. The ability to inflict instant retaliatory punishment on an aggressor is now shared by strategic airpower and tactical airpower.

General O. P. Weyland

## Tradition and the "New Look"

Digested by the MILITARY REVIEW from an article by Captain T. A. Gibson in "The Army Quarterly" (Great Britain) October 1955.

*The views expressed in this article are the author's. They do not reflect official opinion, or necessarily that of THE ARMY QUARTERLY.—The Editor.*

THEY were two small paragraphs, dated Bonn, which followed each other within a few days in a reputable morning newspaper. The first stated that Herr Blank, the West German Minister of Defense, had banned jack boots and dueling scars in the new German Army. The other announcement was that "one of the leading advisors in the West German Defense Office," an ex-colonel, had been dismissed because of "differences of opinion." The news item went on: "His departure ends a longstanding dispute on the question of democratization of the new German Army. He had advocated an army on predominantly German traditional lines."

While the first item probably caused all but the most violent Germanophobe a slight smile, the second, even on first appraisal, obviously alludes to a problem that penetrates deeply and bitterly. "Democratization" and "traditional" are words which, in the military sense, can cover a multitude of sins and topics. They are at least clear pointers to the vast array of problems confronting the military planners in Bonn.

The cynic might say that the German Army has at least done this before; which, of course, is only partly true. After the defeat of 1918 the Reichswehr shrunk to a mere 100,000, denuded of tanks and aviation, but it did not disappear altogether. Under the assiduous care of the coolly brilliant General Hans von Seeckt, the "field-gray Sphinx," the 100,000 became a cadre of finely selected officers and

highly trained noncommissioned officers and men waiting for *der Tag* of expansion. The present case is very different. Since 1945 the German Army has been nonexistent. The planners have no "firm base" to build on; they must conjure their army into existence according to their most detailed and basic designs.

The work involved must be tremendous, and the problems legion. However, in raising an army from the ashes of complete cremation, is there not a possible advantageous aspect to the task? For instance, gone in its previous demise are the old dogmas, the archaic procedures, and the prejudices which, with the passage of time, tend to gather about any service under the masquerade of "tradition." Is not ardent devotion to tradition a convenient maneuver, in many cases, to quell reforms and progress? Or is it the guardianship of the highest ideals which guide the army in its service to the nation?

In the sphere of tactics and organization, a fellow countryman of the dismissed colonel, the late Field Marshal Rommel, had some strong views on the value of a refreshing start from scratch:

*Every European nation has a strong tendency to be tied by tradition. It is not, therefore, surprising that after World War I, in which the respective commands had exploited the then existing means of war to their uttermost limit, many of the European General Staffs became rigidly doctrinaire in their outlook. . . . In Germany development of the air and tank arms was interrupted by the Versailles Treaty. This was perhaps an advantage, since our theories were able to develop in an atmosphere of far greater freedom than they could have done if they had been*

directed into set channels by the existence of armored formations with an established organization and a predetermined tactical role. National Socialism, moreover, gave the avant-garde in the General Staff the upper hand in many questions of principle. Elsewhere in Europe, in France and England for example, where military development was neither interrupted or revolutionized by internal upheaval, this was not the case and there grew up a tremendous rigidity and adherence to system which could in no way meet the requirements of modern warfare. (*The Rommel Papers*, edited by B. H. Liddell Hart. (Collins.))

The banishment of the advanced advocates of the use of armor to the military wilderness in England during the thirties at least corroborates this line of thought; and the German blitzkrieg in France in 1940 confirms it. However, the pre-1939 German Army also had its hard core of orthodox resistance. Rommel goes on to say:

*Nevertheless, even the German Officer Corps was by no means completely free of the old prejudices. There was a particular clique that still fought bitterly against any drastic modernization of methods and still clung fast to the axiom that the infantry must be regarded as the most important constituent of any army.*

#### Personnel Structure

In the light of this it is perhaps interesting to ponder, in passing, if the unswerving loyalty of General Guderian to Hitler to the last, even when all his illusions had long gone, was not due to his appreciation of the dictator's retrieving him and his theories on the organization and employment of armor from the limbo where the "traditionalists" had consigned him. None of his contemporaries seem to brand him as a Nazi or sympathizer as they have done Von Reichenau, Model, and Schoerner.

However, if radical new ideas in the tactical field are, at the worst, stimulating and thought-provoking, revolution in the traditional structure of the army is perhaps fraught with danger. For here that delicate but all-important military quality, morale, can be adversely affected. At least in the British Army most soldiers tend to have fixed and vehement views on their regiment or corps and its customs and privileges, their dress, and the traditions of the service; tampering with these apparently small but heartfelt points can lead to a wave of discontent.

For example, to many Regular soldiers their regiment is their entire military world. To argue glibly that a corps of infantry would be much more modern and efficient is perhaps to sound very advanced but it loses sight of the fact that the Briton is by nature clannish and traditional; certainly not the happy revolutionary. To ask the British soldier to be more immune from his native prejudices than his fellows in civilian life is to be rather ambitious.

Fortunately the British Army has never been faced with the vicissitudes that have befallen the German Army in this century. As one British writer said:

*The other day an officer in one of our oldest regiments was asked by an officer in one of our youngest corps whether his regiment celebrated annually the anniversary of its raising. He replied loftily: 'Not annually: only once in every hundred years.' In no other army in the world could such an answer have been given. Ours is unique in the continuity of its corps and regiments, and in its father-to-son tradition. Officers of other armies have often commented wistfully and enviously on this particular aspect of our heritage. (The Army Museums Ogilby Trust, by Brigadier Bernard Fergusson.)*

How true the last remark is. Even that most modern and streamlined of armies,



the United States Army, is actively conscious of the morale value of tradition. It is perhaps illuminating that the Canadians, who obviously see the best and worst of the two Anglo-Saxon military worlds, have a regimental system with strong territorial and traditional claims and, at the present time, rather "out-British" the British with their dress regulations.

To return to the dismissed colonel, his age, 46, precludes him from being, in the jargon of *Pravda*, too ingrained an "imperialistic reactionary." When the war ended, his age and service, on the certain assumption that he was an above-average officer, would probably have made him a regimental commander or chief of staff to a formation. However, as he would have entered the army about 1930, he would have served 3 years at least before Hitler came to power and before National Socialism permeated through the junior ranks of the officer corps and the rank and file.

His early formative years as an officer would have been spent in the traditional atmosphere nurtured by Von Seeckt and carried on by Von Heye: that of a select officer corps with its proud privileges and aloofness from politics, the unchallenged hegemony of that *corps d'élite*, the great General Staff, and the dedicated service of the army to the state, not to the current reigning political party. As a young officer he would have seen the gradual debasement of the officer corps and the impact of National Socialism on the troops. These early experiences doubtlessly convinced him that the traditional role of the German Army, as propounded by Von Seeckt, was the only solution for its own sake and that of the nation.

But if "democratization" is a terrible word, its meaning is not necessarily so. In the best military sense it probably means better relations between officers and men and possibly a wider source of recruitment for officers. In support of

the colonel's case, Hitler "democratized" the German Army, with widely varying results. Relations between officers and men were certainly far superior to the old Imperial Army of 1914-18; but was this not the result of the years anyway? It is well known that after 1918 the German High Command was concerned with the need for drastic reform in this direction. Also, the troops never lost their faith in Hitler, a hard fact that made several opponents of the regime, such as Von Mannstein and Von Schweppenburg, declare that any *coup d'état* attempted against Hitler was madness because of the attitude of the junior officers and men. There was no parallel in 1944 of a German commander with the immense prestige of Von Hindenburg or Von Mackensen whom the troops would have followed to any task. The German troops of the last war were made the creatures of powerful and insidious political propaganda.

#### Officer Selection

The widening recruitment of officers touches on a controversy not unknown currently in this country. How often does one read in the press a letter by an agitated parent or schoolmaster, alleging that a grammar school boy does not stand a chance before army or navy selection boards, neither does a lad with a local accent despite his academic qualifications, nor a North Country boy since a favoritism is extended to the South. But, after all, there is nothing startling or radical about the present procedure of drawing officer material from more and more sections of the community. Surely the qualifications of an officer, apart from the inherent virtues of courage, good manners, and a sense of responsibility, are personality and brains which have been exercised by a good education. With the spread of higher education and greater prosperity throughout the nation, a wider field of candidates for commissions is a natural process of evolution.



For the purposes of what can be achieved with a little "democratization," the British Army has the example of Field Marshal William Robertson who rose from cavalry trooper to Chief of the Imperial General Staff; the German Army has that of his contemporary, General Wilhelm Gröner, the son of a noncommissioned officer in the Württemberg Army and the brilliant General Staff officer who succeeded Ludendorff in October 1918 as First Quartermaster General. It was his unhappy fate to assume office when the revolutionary Soldiers and Workers' Councils were appearing everywhere and the old order was disintegrating into near-anarchy; in fact, it was his decisive backing of the new Chancellor, heroic, harassed Friedrich Ebert, with the force of the army that plucked Germany from the chaos of revolution.

"Gröner was right, but he should have said to the Marshal [Hindenburg]: 'Find a Prussian to say these things,'" was the comment of King William of Württemberg in his diary on Gröner's announcement [on 9 November 1918] to the Kaiser: 'Today oaths are but words.' The Prussian military caste never forgave Gröner for this incident, even after a Court of Honor in 1922 had declared him to have been prompted by the highest motives." (*The Nemesis of Power. The German Army in Politics, 1918-1945*, by John W. Wheeler-Bennett.)

Today, as the existing armies of the major Western Powers strive hard under the threat of atomic weapons to prune themselves of tactical and administrative appendages gathered during and since the last war, the new German Army may emerge from the drawing board already

reshaped for the nuclear age. It has had ample time to study and profit by the experiences of its fellow members of NATO, and unlike the British and French at least, it will have no worldwide colonial troubles to dissipate its forces and interrupt training.

It would seem that the nature of the spirit to breathe life into the resurrected body will prove its most contentious problem. The West German Federal Government is naturally determined that its parliament will never again be made a mere cipher by an autocratic head of state with the full support of an army officered by the same select class; that the old Junker sentiment that "the Kaiser should never allow the Reichstag to become so strong that he could not have sent a lieutenant and 10 men of the Prussian Guards to close it at any moment" will have no modern counterpart. Moreover, a democratic German Army is more in tenor with the socialistic trend of the postwar world, and certainly will be warmly received by the Federal Republic's new allies, notably France.

On the other side, it could be held that the old traditional army was an impartial and important stabilizing influence on the nation, divorced from politics and beyond party; that its officers were selfless dedicated servants of the state whose common conservative and aristocratic background made them immune from the stresses and persuasions of political strife.

Does the new Germany need a new army in the fullest sense? Or is the only correct thesis that "fire in the belly is essential to the profession of arms, and tradition is the proper fuel with which to stoke it"?

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In Europe we shall endeavor to increase not only the military strength of the North Atlantic Alliance but also its political cohesion and unity of purpose.

President Dwight D. Eisenhower

## Attack in the Tundra

Translated and digested by the MILITARY REVIEW from an article by Alex Buchner in "Wehrkunde" (Germany) December 1955.

WHEN the German Army launched its attack on the Eastern Front against the Soviet Union on 22 June 1941, the Northern German Corps also joined the offensive a few days later by its attack on Murmansk. The corps was entirely on its own in this attack as the closest German unit, the XXXIV Army Corps, was 250 miles to the south.

Murmansk was selected for this operation because it possessed the only harbor on the Arctic that was entirely free of ice throughout the year and gave the Soviets constant and unimpeded access to the Atlantic. The 900-mile Murman Railway running to Leningrad was a vital connecting link for the Soviet Union between the interior and the sea.

The Soviets were well aware of the strategic importance of Murmansk. Situated 12.5 miles from the mouth of Kola Bay, it was strongly fortified and was the base of the Soviet Arctic Fleet. The Soviets had not only planned to secure themselves on their northernmost flank, but also gave clear evidences of offensive intentions. This was shown by the fact that two good roads had been built from Murmansk westward through the tundra. These roads, however, were not completed in the neighborhood of the frontier.

Thus the development of the Soviet northern wing westward was a definite threat to the extreme northern part of Europe. If the Soviets had succeeded in pushing on, they would not only have obtained possession of the important Finnish and Norwegian ports and mines, but also of the strategically important Arctic seaplanes leading southward and thus would have had freer access to the Baltic.

It was to eliminate this permanent threat along with its rear security, Mur-

mansk, that the German Mountain Corps was to execute its attack. The attack to be made by land was to cover a distance of only about 50 airline miles and was to take place on 29 June 1941.

### Terrain and Weather

The tundra terrain which had to be crossed is one of the most difficult for any movement and combat action, and particularly for a major offensive operation. Tundra is desert, primeval, and uninhabited terrain with only sparse plant-life. There are no roads, wooded areas, or inhabited places. Barren knolls and rocky ridges of from 700 to 1,000 feet and more in height succeed one another in endless monotony like the waves of a heaving ocean, finally to plunge downward and end in deep and narrow inlets in the sea. Tumultuous rivers, lesser streams, and gullies cut through the hard primordial rock of the region and between them there is a bewildering confusion of small lakes. Both depressions and elevations are largely marshy.

What little vegetation there is exists in both the depressions and on the marshy banks of the streams and consists of tangled, low birch brush. Aside from this only moss, heather, and lichens are to be found on the thin soil. Steep declivities, masses of boulders and detritus, together with enormous quantities of smaller and larger fragments of broken rock—the latter often lying half buried with only its sharp edges sticking up—complete the picture of desolation. The climate is continental. During three-fourths of the year the icy polar winds prevail, the short summer lasting only from about mid-June to the middle of August. During this latter period a scorching heat prevails which is

sometimes broken by heavy rain storms. One of the particular features of the northern Arctic region is the phenomenon of the midnight sun. During the winter months the sun barely pokes up above the horizon keeping the entire region in constant darkness and during the summer it is constantly in the heavens and illuminates the landscape brightly even at night.

It was evident that in this region, which is able to defy all modern techniques, no blitzkrieg could be conducted. Here, the enormous road and terrain difficulties alone would have held back any offensive action. Regarded from both the operational and strategic points of view, they offered the greatest difficulties to an attacker. The rivers and smaller streams and, likewise, the accompanying lines of hills all ran in a north-south direction—hence perpendicular to the direction of attack—and promised the greatest difficulties to all movements. Regular supply would be a main problem. On the other hand, a defender could find this wild, broken, and trackless region of great advantage. The Soviets would find it easy to supply their fighting forces regularly over the roads leading from Murmansk.

Although initially the difficulties of the terrain were generally known, almost nothing of a definite nature was available concerning them. The 1:300,000 Soviet maps available showed such large, vacant spaces and agreed so little with the Finnish maps of the same scale that no conclusions could be drawn from them. On the other hand—and with very troublesome consequences—map markings were interpreted incorrectly. Roads were indicated through the terrain that had to be crossed but these, to the indigenous travelers over the tundra, meant only winter trails which, as such, led over frozen marshes, moors, and lakes, but they could not be used in the summer. Just as little had been learned from aerial photographs and reconnaissance. At al-

most the last minute a reconnaissance flier discovered a short stretch of road about 6 miles south of Titovka, which he incorrectly reported as a road running south-eastward toward Murmansk.

### Opposing Forces

Little was known of the Soviet forces. Two or three divisions of the Soviet Fourteenth Army were presumed to be at Murmansk and its 14th Rifle Division was thought to be west of there. It had been learned, however, that there was a short line of bunkers, reinforced by field positions, between the Titovka and the frontier. Work was being pushed speedily on these fortifications. Judging from the enemy's open manner of working and his deportment he apparently was not expecting any immediate attack. His strength in this place was estimated to be at least one battalion with supporting artillery. In the region south of Titovka was a camp where there was thought to be about one regiment. The enemy was estimated to be so strong on the Rybachi Peninsula that we could expect serious resistance if we attacked there. It was soon confirmed that we faced the best of Siberian and northern Soviet troops of pronounced combat morale, accustomed to the climate, weather, and terrain characteristics of that region and fanatically tenacious in battle.

Our 2d Mountain Division was able to throw only two mountain infantry regiments—the 136th and 137th—into the fight against them. The division artillery comprised two battalions of mountain artillery—1st and 2d Battalions of the 111th Mountain Artillery Regiment of 75-mm guns loaded on pack animals. There were additional division troops: the 67th Bicycle Battalion, the 82d Mountain Engineer Battalion, the 55th Antitank Battalion, and the 67th Mountain Signal Battalion plus the corresponding supply units. Attached heavy artillery and antiaircraft

artillery were to support the first attack, and the 1st Company of the 40th Special Armored Battalion for Special Employment was to be used in the ensuing pursuit.

### The Breakthrough

The latest reconnaissance efforts had provided more important data for the attack but still there was no information concerning the terrain or the enemy forces.

As the most important prerequisite for the attack of the 2d Mountain Division, a section of road was built in 7 days from Parkkina to Hill 357 (Kuosmoaivi). It was planned to extend it through the trackless region and connect it with the stretch of Soviet road that had allegedly been discovered.

Its first mission was to block the neck of Rybachi Peninsula by the use of minor forces in order to protect this flank from the north. This operation would be at the corps' center of operations, which was immediately to the left of the 3d Mountain Division. The main body was to seize the line of enemy bunkers then attack in the direction of Titovka.

The division commander formed two attack groups for this mission. The reinforced 136th Mountain Infantry Regiment with one mountain battery was to conduct the secondary operation along the coast against the Rybachi Peninsula and, after establishing a defense barrier, push on against Titovka from the northwest with one battalion, the 3d Battalion of the 136th Regiment. The 137th Mountain Infantry Regiment, reinforced with one engineer company and two mountain batteries, was to seize possession of the enemy bunker position north of Hill 204 with one battalion, but with the main body of the regiment, was to outflank the enemy defensive line on the south. Following this it was to move straight across the tundra and seize the important Titovka bridge 4.5 miles southwest of Titovka, thus reaching the start of the vital So-

viet road. It was not possible to outflank the entire line of bunkers. They had to be seized as quickly as possible in order to be able to continue with the road construction. The attack was to begin at 0300 on 29 June.

The division was able to fulfill its first mission in a surprisingly short time. Working its way with difficulty along the eastern side of the Bay of Liinahamari, the regiment ran onto completely surprised frontier guards in its attack. In spite of gradually stiffening enemy resistance, the important rocky height of Hill 240 was in German hands by the forenoon of 29 June. The German garrison held its own in its blocking position at the neck of the Rybachi Peninsula until 1 July in spite of counterattacks by amphibious Soviet troops supported by heavy Soviet naval artillery fire. Nevertheless the enemy situated on the flank was a continuous threat to the division—in fact, to the entire corps. As time passed this secondary front immobilized additional forces of the already weak division.

On 29 June the main attack of the division was begun by the reinforced 137th Regiment. The planned preparatory fire of the artillery could not be laid down because of a dense fog at the time of the attack. Likewise, a promised attack by *Stukas* on the line of bunkers could not be accomplished. The commanders of the operation who wished to watch the start of the attack of the infantry from Hill 357 perceived with satisfaction that the 2d Battalion of the 137th Regiment, which was attacking as a shock troop unit, had apparently broken through between the enemy bunkers and was beginning to roll these up toward the north. It was not, however, until around 1900 that the line of bunkers was taken at a heavy cost.

The construction battalion, the National Labor Service Battalion, and all available elements of the division immediately

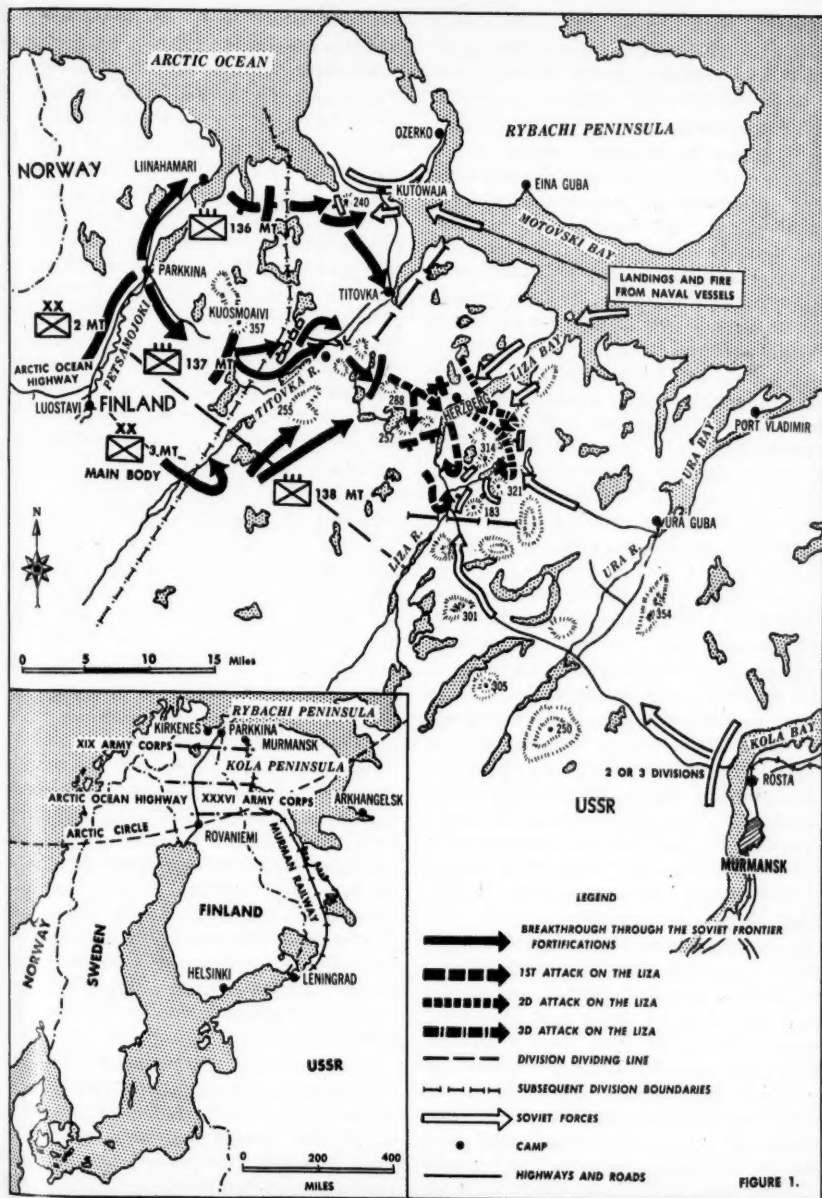


FIGURE 1.



began the construction of a road across the frontier in order to bridge the trackless stretch to the Titovka and thus ensure the movement of supplies.

In the meantime the fog which had prevailed during the morning had proved advantageous to the attack of the main body of the regiment. The regiment, unnoticed by the enemy, had made a good advance over the difficult terrain. It was not until the afternoon that strong resistance was encountered close to the Titovka bridge. The regimental commander had his 1st Battalion pin the enemy down by a frontal attack, had his 3d Battalion cross the Titovka south of that town, then drove ahead for an attack on Hill 288. This brought about a collapse of the defense at the bridge. By 0400 on 30 June it was in German hands intact, and was used by the 1st Battalion and the tanks which had arrived in the meantime.

#### Drive to the Liza

It was now the task of the division commander to exploit the success that had been obtained. The thing to do now was to push eastward with strong forces as rapidly as possible. Hence the order was given the 137th Regiment to seize possession of the Liza bridge which was about 7.5 miles south of the mouth of this stream. The 67th Bicycle Battalion was to turn north and capture Titovka and drive the enemy forces who were fleeing down stream into the arms of the approaching 3d Battalion of the 136th Regiment.

On 30 June there were decisive changes in the situation. The advanced detachment which had been dispatched in the direction of the Liza bridge discovered at around 1300 that the road it was on came to an abrupt end about 3 miles east of the Titovka bridge. Contrary to the air reconnaissance report, the Soviet road which was supposed to exist came to a complete end in the tundra. The armored company was definitively halted. Even

the tank treads were no match for the boulders and rocks as almost all the tanks had been put out of action by them.

And now the division stood, midway in its advance, facing an entirely trackless tundra area. The best it could hope for was to run onto the real road after crossing the tundra. The division was to find out to its sorrow that such a road actually existed when air reconnaissance reported that at about 1200 an enemy column of between 15 and 16 miles long was approaching from the east over the Liza bridge. At this alarming report, the division halted the 137th Regiment which had reached the region 2 miles west of Zapad Liza. The division commander arrived at the following estimate of the situation:

Since the greater part of the Soviet 14th Rifle Division in front of them could be regarded as generally pinned down, the reported approach of enemy forces in the Liza valley could only be the arrival of fresh reserves in division strength from the Murmansk region. This force would be expected to launch a counterattack at any time.

In contrast the forces available at the moment to the Germans were only two battalions, both of them worn out by their struggle with the enemy and the terrain. They were far ahead of the entire corps and obviously too weak to advance against this new enemy. It was questionable whether they could be supplied at all over the expanse of tundra if they continued to advance. Hence the decision and, with it, the order that the 137th Regiment for the time being was to go over to the defensive, hold the terrain that had been won, and conduct reconnaissance on the Liza.

The following day brought additional bad news for the division. The 3d Battalion of the 136th Regiment southwest of Titovka, which had been ordered to push ahead, reported that the supposed road running from Titovka to Zapad Liza



was nothing more than a Soviet telegraph line running across the tundra. On the poorly printed map it had been taken for a road. On the other hand, however, air reconnaissance had discovered a newly completed road on the enemy's side of Ura Guba and they would be able to rush additional forces over it.

The German supply problem was already a matter of serious concern. The 3d Mountain Division, which had begun to advance east of Luostavi, had encountered no enemy forces. On the other hand neither had it discovered any trace whatever of the road which was supposed to be there. Its drive had been into a complete void. From the position it had attained in the midst of the tundra, its main body—less the 138th Mountain Infantry Regiment which had veered north into the sector of the 2d Mountain Division—had to be recalled to its jumpoff position and was now following behind the 2d Mountain Division. As a result, the latter's road, which was still under construction, became the sole advance and supply route for the entire corps and was greatly overloaded by the now inordinate amount of traffic.

#### Attack Across the Liza

In a conference with the corps commander on 3 July, the division commander was opposed to a frontal attack against the bridge in the Liza valley and the road which extended from there. The enemy was completely in control of these with his possession of Hill 183.6 which he had fortified. The division commander proposed a wide outflanking attack from the north against the Ura Guba Road. The corps commander insisted, however, on an attack in the Liza valley because it was only over this road that a major formation could be supplied regularly, while over the sector leading to the Ura Road, which until recently had been trackless, supply would be more difficult. He did agree to an attack by a limited force on the east bank in order to open up the defensive position

from the northern flank. The objective was to be the establishment of a German bridgehead. The objective of the 3d Mountain Division was a line established about a half mile south of the bridge.

The enemy forces in the Liza bridge area were estimated to be about a regiment in strength, but with powerful artillery. Our own offensive preparations could not remain concealed to the enemy air reconnaissance.

On 5 July the 2d and 3d Battalions of the 137th Regiment moved into an assembly area north of the bridge. Moving ahead about 1000 on 6 July they soon ran into the fire of enemy forces excellently concealed and camouflaged in recesses in the rocks. These forces apparently were still acting as combat outposts on the west side of the river. Numerous sharpshooters shot down the pack animals which were carrying the heavy weapons and ammunition. However, at the cost of heavy losses, the west bank of the river was mopped up by 1430. Thereupon, however, all further advances in the bridge area were halted by heavy enemy fire. A new concentrated attack at 1900 resulted in additional losses. The regiment could not force the passage so organized itself for defense on the west bank during the night.

The attack of the 1st Battalion of the 137th Regiment was halted at the southwest end of Long Lake. In the meantime the 3d Mountain Division, which was attacking farther south of the bridge, had been able to establish a small bridgehead and Hill 183.6 was seized during the night of 6-7 July in a joint flanking operation by the 1st Battalion of the 137th Regiment from the north and elements of the 138th Regiment from the south. During the evening hours, however, the 138th Regiment was severely beset by enemy attacks. Hence the 1st Battalion of the 137th Regiment moved out alone to the attack, was unable to capture the hill, and found itself pinned down in the midst of the

enemy's main defensive area. Reports came in from it only occasionally and even these were garbled.

By the evening of 7 July it was clear that the battalion northwest of Hill 183.6 was completely surrounded. Since the division was incapable of relieving the unit immediately, at 2300 it was ordered to retreat toward the north. With this decision it became necessary to abandon the hard won position on the north flank of Hill 183.6, but this was the only possible course if the battalion were to be saved from complete annihilation. The battalion, which was unable to effect a breakout in a concentrated effort, scattered in all directions and attempted to fight its way through the enemy in groups. Finally, at the cost of heavy losses of men and matériel, a large part of it succeeded in reaching the region near the mouth of the Liza. The Soviets immediately plunged after it and during the following days occupied the high ground between Hills 258 and 274 on the east side of the river which also brought them closer to the mouth of the Liza.

A critical situation on both sides of Liza Bay now arose. Early in the morning of 6 July enemy vessels had appeared in the bay and landed troops on its south shore. These troops had attacked the advanced forces of the 3d Battalion of the 136th Regiment near the Liza camp. Late in the afternoon enemy forces also appeared on the hills on the north shore of the bay. The division now had to turn its attention to this new sector. It ordered the establishment of a barrier line between Zapad Liza and Hill 240.3 northwest of there by the remaining forces of the 3d Battalion of the 136th Regiment which turned back an attack by an enemy battalion on the evening 7 July. However, the pressure was increased by further landings on 8 July. If the Soviets succeeded in a further advance they would be able to cut off the division and the

entire corps from their sole supply route. By his advance on the east side of the Liza, the enemy probably hoped to establish a bridgehead for himself at the mouth of this river, attract German forces to it, and in this way relieve the pressure on his roads and bridges.

#### Second Attack at the Liza

A new attack had to be undertaken soon because by waiting longer the enemy would be able to organize himself further for defense and could bring up additional forces for a counterattack—his strength was now about four regiments. This time the corps commander agreed with the division commander, namely, to knock out the enemy's Liza bridge defense by an attack with strong forces circling around and striking from the northeast. By incessant effort supply conditions had been so greatly improved that the trackless portion of the supply route now embraced only the region beyond Herzberg Hill.

On 10 July the operations order had just been issued when a very unfortunate event occurred. The staff messenger of the 136th Regiment went through his own frontline by mistake and was traveling along the Kutowaja road when he was wounded and captured by the enemy. As a result the written corps order with all the details of the coming attack fell into Soviet hands. Although the attack plan was altered as quickly as possible, the enemy obtained extremely valuable hints with regard to formations, organization, and artillery support.

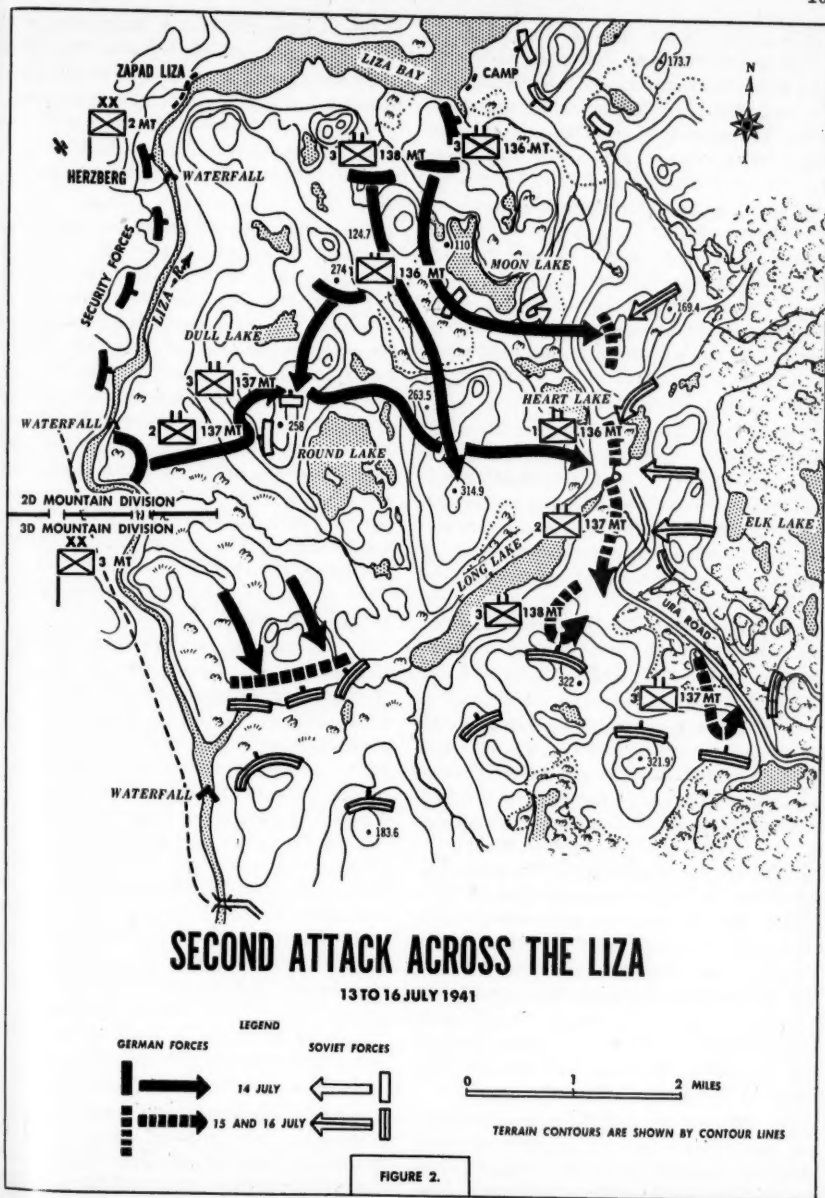
Once again the 2d Mountain Division had to conduct the main attack while the 3d Mountain Division provided flank protection on the south. It was merely to turn south on the east bank of the Liza with two battalions and effect a junction with the 2d Mountain Division. All the available forces of the corps were placed at the disposal of the division commander as a concentrated attack force.

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The division's attack plan was to cover its maneuver toward the east with one covering group and with this protection to reach the Ura Road with one attack group by moving along the east side of Long Lake. After seizure of the commanding heights 322 and 321.9, a thrust was then to be made into the rear of the enemy's center around Hill 183.6. Its annihilation would mean the rupture of the Liza front. In this connection the possession of these heights was of decisive importance to any further operations regardless of whether they were conducted with their main effort in the direction of Ura Guba or Murmansk.

The 2d Mountain Division launched its attack at 1730. The sky was dark and the rain fell in torrents. After fighting off counterattacks during the night the 3d Battalion of the 136th Regiment reached the Heart Lake area, turned north, and by noon on 15 July was able to occupy Hill 169.4. The 1st Battalion of the 136th Regiment had taken Hill 258.3 on 13 July, and the 3d Battalion of the 138th Regiment had taken Hill 314.9 early on 14 July.

At 2200 on 13 July the 2d Battalion of the 137th Regiment had crossed the Liza in rubber rafts and was able to gain some ground on the far side against weak resistance. About 0400 the heavy fog lifted and soon enemy artillery began ranging on the footbridge which had been constructed in the meantime. In spite of this the bulk of the regiment crossed the bridge. The 2d Battalion had expanded its bridgehead but had been unable to cross a marshy belt which lay in front of Hill 258. Stubbornly defended enemy nests at the foot of the hill had to be subdued. About 1400 the higher terrain was reached and contact established with the 1st Battalion of the 136th Regiment.

The exhausting march to the east was now continued. During the night of 14-15 July the main body of the attack group passed Round Lake and crossed the saddle

between Hills 263.5 and 314.9. Early in the morning the 2d Battalion of the 137th Regiment, which was serving as the point battalion, plunged down into the depression south of Heart Lake, and was met with a devastating hail of bullets from the thickets and rocks of the hills to the east.

The units had to fight to reach the assembly area and finally the assembly area itself had to be taken from the enemy by force. To accomplish this it was necessary to seize the hills to the east flanking the approach to the lake. While the two mountain battalions went into position and were soon lending their support by alternating concentrations of artillery fire, the 1st Battalion of the 136th Regiment attacked south of Heart Lake and was able to push the enemy back in hard hand-to-hand fighting. As a result the main body of the regiment was able to move past the fighting battalion and continue on across the narrow strip of lake toward the south.

As the present position was untenable, it was decided to have the 2d Battalion of the 137th Regiment launch an attack. Some elements of the 3d Battalion of the 138th Regiment had succeeded in storming the edge of the plateau on Hill 322 but in the face of the powerful enemy defenses had gotten no farther and the entire 2d Battalion of the 137th Regiment which was to make the attack was pinned down at the base of the steep slope in the depression by the lake. It was impossible to send reinforcements and support to the 138th Regiment since the position that had been attained on the edge of the plateau was too small to accommodate any additional units. An outflanking movement failed under enemy flanking fire.

The furious attacks of the Soviets from the south, southwest, and east continued throughout the night of 15-16 July and finally at 1000 on 16 July the division order to retreat was given. After the with-

drawal was effected, the Soviets lunged out in pursuit of the regimental group which had gone over to the defensive at the narrow strip of lake and on the slopes east of it.

The second attack of the division had failed because the 3d Mountain Division had been halted south of Long Lake. The establishment of a rather large bridgehead was the only success that could be recorded. The assault force of the four battalions that were engaged was all too quickly exhausted and reserves could not be brought up. Losses were high. The evacuation of the large number of wounded required an enormous number of men and thereby reduced combat strength still further. Rations and ammunition were almost gone. As a result of the continuing enemy attacks a changeover to defense had to be made. The major concern was systematic supply without which there could be no thought of continuing the fighting.

Continuing, overwhelming Soviet attacks combined with powerful artillery and rocket-mortar fire were cutting up the 137th Regiment so badly it was decided that a further withdrawal was imperative. The division ordered the formation of a narrower bridgehead covering Hills 258.3 and 274.3. This bridgehead was to be held at all costs so that new attacks could be launched from it.

### Third Attack at the Liza

When the enemy was finally forced to recognize the futility of his attacks on the bridgehead, he attempted to force the north flank of the division by new landings on the north shore of Liza Bay. The combat group of the 136th Regiment succeeded in clearing up the situation after a 2-day battle.

As a result of this success, it was decided to seize the initiative by launching a third attack before the beginning of winter. This time the 2d Mountain Di-

vision was to roll up the enemy positions along the south shore of the bay, then veer to the southeast and with the 3d Mountain Division, which would attack from the south, crush the heart of the enemy's defensive system in the area of Hills 183.6 and 322.

The preparations for this maneuver were influenced by the cool and damp fall weather. The midnight sun had already disappeared. Only weak forces were left to hold the bridgehead—everything else being assembled for a strong attack. For the first time the attack was conducted in two waves, that is with reserves. At dawn on 8 September two battalions of the attached 9th SS Infantry Regiment together with the battle-tested 136th Regiment attacked Hill 173.7. The 137th Regiment followed as the second wave. With exemplary fighting spirit, strongly supported by all available artillery, the infantry, the 3d Battalion of the 136th Regiment in advance, stormed the objective on the evening of 8 September. Violent counterattacks threw the regiment back again.

On 9 September the 1st Battalion of the 137th Regiment was obliged to join in the attack in order to recapture Hill 173.7, which had temporarily been lost, and hold it against strong Soviet attacks from the east. In the further attack southward the German forces had no better success in capturing their hill. On 12 September the 1st and 2d Battalions of the 137th Regiment again attacked from the area of the narrow strip of lake but had to be pulled back because of excessive losses.

Since the 3d Mountain Division had also been halted, encirclement of the enemy was impossible. There was no longer any doubt about the outcome. While the Soviets were able to compensate for their heavy losses by bringing up new units over the Ura Road, the 2d Mountain Division, which had been engaged in uninterrupted fighting for 2.5 months, was



completely crushed and the mountain infantry completely exhausted and decimated. The drive on Murmansk had to be called off. It was never again attempted during the subsequent years of the war. The northernmost wing of the German front was definitively obliged to remain on the defensive.

The 2d Mountain Division was relieved and in October 1941 transferred to the Kirkenes area for rest and reorganization. In spite of all their sacrifices, the troops had been denied a victory for which they had paid a fearful price. The extent to which individual units suffered is shown by the 137th Mountain Infantry Regiment which was continually at the focal point of the action of the 2d Mountain Division. This unit suffered casualties of 278 dead and 1,015 wounded during the period 14 July to 7 September.

#### Experiences and Lessons

It was learned that both terrain and enemy had been far underestimated. As a result of faulty knowledge of the terrain, especially the absence of presumed roads, serious delays occurred, the attack tempo of the 2d Mountain Division was reduced, and the factor of surprise was absent. The enemy was able at the decisive moment to bring up promptly strong forces which fought with bitter tenacity in the tundra area. This area was particularly suitable for defense. These troops could be reinforced and supplied regularly over the good roads which existed in the Soviet sector. The enemy was able at any time to relieve the pressure on his frontlines by flank attacks along the coasts conducted by his naval forces.

The 2d Mountain Division, which was placed by the corps at the focal point of action, was much too weak with only two regiments and the initial attack sector of over 24 miles of tundra terrain was much too broad. Although the attack on the Rybachi Peninsula must be regarded as a secondary operation, nevertheless,

German forces were continuously immobilized by the threat existing there.

Likewise, the supply setup of the division, which in terrain of this type is particularly vital, was extremely inadequate. Valuable combat units had to be employed in road construction and supply operations as a result of this.

All these tasks decimated the division, which was already weak, and caused it at times to drop in effectiveness to that of a regiment. Lack of proper reserves made any exploitation of partial successes in individual attacks impossible.

Absence of organic aviation and anti-aircraft artillery protection exposed the troops to heavy air attacks in terrain which was lacking in cover for an attacker, and often caused plans to be revealed prematurely.

The tempo of an attack in the tundra is fixed in advance by the enormous terrain difficulties that exist there. A blitz attack is impossible and even with technical assistance the tundra can be crossed only slowly and with difficulty. The use of mechanized and motorized combat forces is impossible—unless they are employed on properly constructed roads.

Further, an attack in the tundra is dependent on road construction for supply—which requires a thorough knowledge of the terrain. For this reason an attacker needs an abundance of construction and supply troops and numerous technical facilities. A mixed formation composed of specialized infantry forces as combat troops in the lead to be followed by a highly technicalized wedge would be suggested. The attacking forces must be exempted from all other tasks and remain strictly together. The rear would consist of several echelons having the task of conducting covering operations and providing flank protection.

A divisional headquarters that is burdened and distracted by other duties should organize its own command staff with a



corresponding command and signal communication setup which can be immediately put into action when the situation requires it. When once engaged in combat, there is little chance of influencing the combat forces and the development of the fighting from the rear. Actual command is possible only when one is present at the front, since in addition to the difficulty of obtaining an accurate picture of the terrain, poor messenger service also exerts a considerable influence. Complete failure of radio and other technical communication equipment is also frequent because of water and moisture from the marshes as well as the large ore content of the rocks.

Direct attack must be conducted by reinforced, largely independent units capable of effecting their movements on foot. The formation of regimental combat groups proved advantageous. Heavy weapons—especially mortars—and artillery must accompany the combat forces in order to be able to support the action with direct fire immediately. Fire control over long distance in this terrain is too difficult.

Within the combat group, a dispersed form of advance should be selected but the individual elements should not be echeloned in depth too greatly, for example, to be able to prepare quickly for combat. The leader of the combat group must have a close control over all his units or they will be "swallowed up" by the tundra. Instead of an order, based on map readings, it is better to give the units limited missions. The excessive time required for these laborious movements must be taken into consideration. Before any concentration of troops takes place in this terrain, which provides many opportunities for ambushes, instructions must be given that strong enemy resistance is to be crushed by outflanking actions. Thrusts which lead to costly hand-

to-hand fighting in dense brush or broken, hilly terrain are to be broken off at an opportune moment and the attack continued in another place employing skillful use of the terrain. In addition, continual reconnaissance of both enemy and terrain is necessary.

Particular thought is to be given to the operations of long-range scouting forces, commando undertakings, the destruction of roads and bridges, attacks on camps, and the seizure of staffs far behind the enemy's lines.

Attacks and combat in the tundra place especially high physical demands on troops. They must be accustomed to fighting with complete reliance on their own resources far removed from all civilization. Combat in the tundra requires that type of man who can get along by himself, is accustomed to nature, is hardened of body and soul and able to endure all the hardships of weather and terrain, can live off the land, maintain the continual vigilance of a scout, a hunter, and a sharpshooter, and whose best comrades are the pack animals which are indispensable for all movements in this type terrain.

Since artillery fire, because of the shielding action of the rocks, proved ineffective in some cases, great importance will attach to air attacks and especially the attacks of ground support aviation. A prerequisite for the use of the latter is good signal communications so that one's own forces may be easily recognized. Helicopters and transport aviation would contribute decisively to the supply of advanced combat detachments. Reconnaissance aviation would have the continuous mission of watching and reporting the enemy picture—with especial attention to enemy outflanking movements, landings, and road construction. The use of aviation will often be limited, however, by weather conditions.

# BOOKS OF INTEREST TO THE MILITARY READER

**THE SECRET RAIDERS.** By David Woodward. 288 Pages. W. W. Norton & Co., Inc., New York. \$3.75.

By CAPT WILLIAM P. WOODS, *USN*

This is a detailed account of the cruises of the German armed merchant raiders of World War II. Their captains were good man-of-war-men and cunning, although, at times, ruthless; their crews were well trained and liked this type of work. The gunnery of these ships was of such a high quality that very often the radio rooms of enemy merchant ships were knocked out even before a distress message could be transmitted.

Although not one of the main war offensives, these raiders extracted a terrific tariff on the early Allied war effort in terms of longer merchant ship routing and additional time necessary for control of convoys. Destruction or capture of ships by the raiders was, of course, essential but making an enemy use six or eight merchant ships to do the work of four became quite a problem when multiplied by a thousand.

The disguised raiders were powerful ships but their captains were under strict orders to avoid enemy warships. The *Kormoran* was finally trapped by *Hmas Sidney* and in the engagement the ships sunk each other. In another action the *Stier* engaged the American Liberty ship *Stephen Hopkins* in the South Atlantic.

*The Secret Raiders* is well worth your time and is effortless reading.

**WOODROW WILSON AND THE BALANCE OF POWER.** By Edward H. Buehrig. 325 Pages. Indiana University Press, Bloomington, Ind. \$5.00.

By LT COL MITCHEL GOLDENTHAL, *CE*

This is a detailed, scholarly examination of the metamorphosis of American foreign relations between 1914 and 1917 from which collective security emerged. During these 3 years:

*Wilson was picking his way amid the confusion of a major turning point in history, and his policy was in constant process of mutation, each phase mingling with later stages. The rules of maritime warfare were the first point of departure. Then mediation became the main objective. Finally, a league of nations, transformed from an inducement to a negotiated peace into a war aim, emerged as the major good.*

This book finds much in Wilson's conception of collective security which reflects the optimism of the last century rather than the cold realities of the twentieth. Of particular interest to military readers is the author's discussion of Theodore Roosevelt's views on fighting effectiveness and the use of military power to emphasize national advantage.

The Wilson and Anderson papers, the Lansing diaries, and the intimate papers of Colonel House help bring a complex area into a new and challenging focus.

**CIVIL WAR IN PICTURES.** By Fletcher Pratt. 256 Pages. Henry Holt & Co., New York. \$10.00.

By LT COL WILLIAM D. McDOWELL, *Inf*

A skillfully selected group of etchings has been woven into a narrative account of highlights of the Civil War with a running commentary by Fletcher Pratt.

Viewed as a whole, the book depicts by pictures and words the military actions and the concurrent political events of the period. The inclusion of a number of classified advertisements from Union newspapers does much to help the reader understand the social moves of the day.

The rather evident lack of authenticity of some of the drawings is indicative of the inferior reporting and distortion of fact by some Civil War correspondents. This, however, does not detract from the over-all value of the book as Mr. Pratt sets the record straight in his narrative.

The frequency of battle scenes on or adjacent to rivers again reminds the reader that the early part of the war was primarily a battle of riverline logistics. The relatively infrequent attention given to Union artillery may indicate one reason why it took so many years to assess the military lessons of the Civil War.

**AIRMAN AT YALTA.** By General Laurence S. Kuter, United States Air Force. 180 Pages. Duell, Sloan & Pearce, New York—Little, Brown & Co., Boston. \$3.00.

By MAJ JACK D. STEVENS, *USAF*

When General Henry H. Arnold became ill in January 1945, Laurence S. Kuter (then a Major General) was designated spokesman for the Army Air Forces at the Yalta Conference. *Airman at Yalta* is General Kuter's account of this crucial conference and the events leading up to it.

The book dwells primarily on the air problems which had to be resolved. These were the British-American proposal for tactical coordination of Allied air opera-

tions in Europe; Russia's requests for American aircraft; and United States requests for bomber bases in Siberia to be used in carrying out the air offensive against Japan. Interesting sidelights to this central theme are many anecdotes about the famous personalities at the conference, and vivid descriptions of Russian hospitality and the social activities at Yalta.

This book will be interesting and valuable reading for all military personnel.

**THE BOXER CATASTROPHE.** By Chester C. Tan. 276 Pages. Columbia University Press, New York. \$4.50.

By LT COL WILLIS B. SCUDDER, *Army*

Most books written on the subject of the Boxer incident have based their story on western sources. In this volume Mr. Tan has made use of available Chinese material and, as a result, the reader will find a different approach to the "Boxer catastrophe."

The author dwells at considerable length on the situation and events leading to the "catastrophe"; and the efforts on the part of Western Nations to obtain more concessions and to solidify those already granted. It is a tragic and sordid story, and through it runs the thread of a young and inexperienced Chinese nationalism. Written in easy flowing language, the military reader will find this an interesting study of a "catastrophe" that never should have happened.

**POLITICS AND SCIENCE.** By William Esslinger. 167 Pages. The Philosophical Library, Inc., New York. \$3.00.

**COMMUNISM AND THE RUSSIAN PEASANT.** Moscow in Crisis. By Herbert S. Dinerstein and Leon Goure. 254 Pages. The Free Press, Glencoe, Ill. \$4.50.

**POLITICAL THOUGHT.** By C. L. Wayper. 260 Pages. The Philosophical Library, Inc., New York. \$3.75.

**THE CRECY WAR.** By Lieutenant Colonel Alfred H. Burne, 366 Pages. Oxford University Press, New York. \$7.00.

By LT COL SAMUEL G. KAIL, *Inf*

*The Crecy War* is a scholarly and exhaustive study of the first of four almost separate wars which taken together are better known to the devotee of military history as the Hundred Years' War. It covers, in all its military aspects, the invasion of France by the English King, Edward III, which commenced in 1337 and terminated in the Peace of Bretigny in 1360. Colonel Burne is a perfectionist; he leaves no stone unturned in his efforts to present and to discuss all that is known on his subject. The text is accompanied by sketch maps which explain and depict many of the battles, as well as diagrams which illustrate the formations adopted by both combatants.

To the true student of military history it will prove to be extremely interesting and informative. To the casual reader the details and exactness with which each battle is examined makes for tiresome and difficult reading.

**HELLCATS OF THE SEA.** By Vice Admiral Charles A. Lockwood, United States Navy, Retired, and Colonel Hans Christian Adamson, United States Air Force, Retired. 335 Pages. Greenberg Publishers, New York. \$5.00.

By CAPT RALPH J. BAUM, *USN*

This is a story of how nine United States submarines in June 1945 penetrated the carefully laid "hellpot" (mine) fields across the entrances of the Sea of Japan and disrupted Japan's last sea lines of communication. All during the war Japan had considered this area her own private lake and so certain was she that her defenses could not be penetrated, Japanese ships sailed under peacetime conditions, all lights on, lighthouses flashing and singly, with no escorts.

Vice Admiral Lockwood, who was Commander Submarines, Pacific, planned this operation and picked the submarines and commanding officers who were to carry out his plan. *Hellcats of the Sea* tells why and how this daring plan was conceived. The story of fulfillment of the aim of eliminating the last safe ocean area for the Japanese Merchant Marine and Navy is told in the words of the officer in command of the nine submarines and by each submarine commanding officer. The reader is able to go along with each submarine as it passes the minefields, engages the enemy, and returns to safety.

**HITLER.** By Otto Dietrich. 277 Pages. Henry Regnery Co., Chicago, Ill. \$3.95.

By LT COL IRVING HEYMONT, *Inf*

Written by Hitler's Chief of Press Relations from 1933 to 1945, this book is a contribution to the growing Hitler literature authored by survivors of those who were close to him in varying capacities. Mr. Dietrich's duties were more concerned with Hitler's press relations and publicity than with official propaganda. While undoubtedly close to Hitler, he was far from being in the Führer's complete confidence. In the spring of 1941 apparently everyone around Hitler but Mr. Dietrich knew that the invasion of the Soviet Union was in the immediate offing.

Many incidents are recounted to illustrate the author's views of Hitler's faults, talents, and aberrations. Of particular interest are his observations of Hitler's relations with his generals and the operations of Hitler's wartime field headquarters.

This well-translated book is of value to the specialist and to the general reader who desires a fuller picture of Hitler as an individual.

**PRINCIPLES OF PSYCHOANALYSIS.** Their Application to the Neuroses. By Hermann Nunberg, M.D. 382 Pages. International Universities Press, New York. \$7.50.

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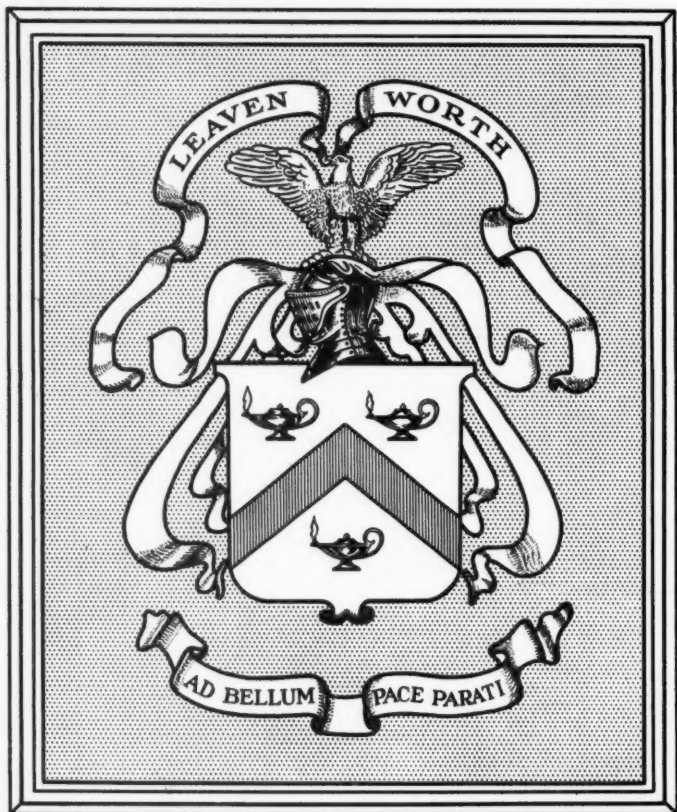
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